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Virginia Commonwealth University Medical College of Virginia Bulletin

Virginia Commonwealth University

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Virginia Commonwealth University
Richmond, Virginia

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Medical College of Virginia Campus Bulletin
1976-77



The Board of Visitors, the administration, and the faculty of Virginia Commonwealth University are committed to a policy of equal opportunity in education without regard to race, creed, sex, or national origin.

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1976-77 Bulletin

Volume LXXIII, September 1976

Medical College of Virginia of

Virginia Commonwealth University

Richmond, Virginia



1976-1978 MCV CAMPUS CALENDAR

FALL 1976

August 23-25	— Orientation and registration
August 26	— Classes begin at 8 a.m.
September 6	— Labor Day
October 22	— Last day to drop a course with a grade of "W"
November 24	— Thanksgiving holiday begins at 5 p.m.
November 29	— Thanksgiving holiday ends at 1 p.m.
December 10	— Last day of classes for fall semester
December 13-17	— Fall semester final examinations
December 17	— Christmas vacation begins at 5 p.m.

SPRING 1977

January 7	— Orientation and registration for new students
January 10	— Classes begin at 8 a.m.
March 4	— Last day to drop a course with a grade of "W"
March 4	— Spring vacation begins at 5 p.m.
March 14	— Spring vacation ends at 8 a.m.
April 29	— Last day of classes for spring semester
May 2-10	— Spring semester final examinations
May 14	— Commencement

FALL 1977

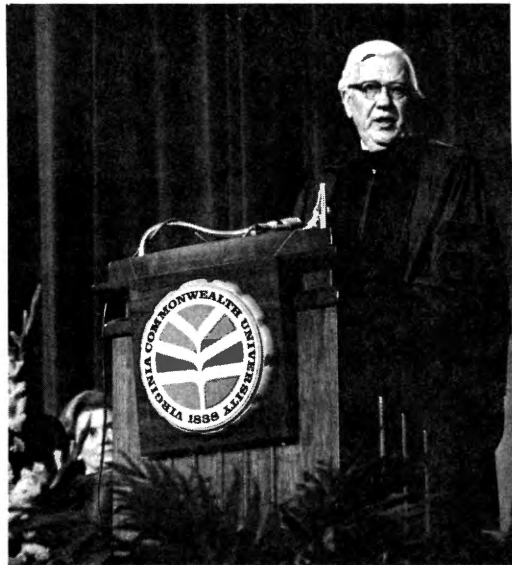
August 22-25	— Orientation and registration
August 29	— Classes begin at 8 a.m.
September 5	— Labor Day
October 21	— Last day to drop a course with a grade of "W"
November 23	— Thanksgiving holiday begins at 5 p.m.
November 28	— Thanksgiving holiday ends at 8 a.m.
December 9	— Last day of classes for fall semester
December 10-18	— Fall semester final examinations

SPRING 1978

January 6	— Orientation and registration for new students
January 9	— Classes begin at 8 a.m.
March 3	— Last day to drop a course with a grade of "W"
March 4	— Spring vacation begins at 12 noon
March 12	— Spring vacation ends at 8 a.m.
April 28	— Last day of classes for spring semester
April 29 - May 7	— Spring semester final examinations
May 13	— Commencement

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GENERAL INFORMATION

HISTORY

The Medical College of Virginia of Virginia Commonwealth University was founded on December 1, 1837, when the president and trustees of Hampden-Sydney College created a medical department in Richmond. This medical department became the Medical College of Virginia (MCV), an independent institution, in 1854. In 1860, when the Commonwealth of Virginia appropriated \$30,000 for MCV's first hospital, Old Dominion Hospital, MCV became a state-supported institution.

The first outpatient clinic was established in 1867.

In 1893 a second medical college, the College of Physicians and Surgeons, was established just two blocks from the Egyptian Building, MCV's oldest building. In 1894 its name was changed to the University College of Medicine. This college and MCV were consolidated in 1913.

MCV today consists of the Schools of Allied Health Professions, Basic Sciences, Dentistry, Medicine, Nursing, and Pharmacy. In addition there are educational programs available in blood banking, EEG technology, cytotechnology, and a dietetic internship.

Recently organized units include the Center for Community Health and the MCV/VCU Cancer Center.

On July 1, 1968 the Medical College of Virginia became the Health Sciences Division of Virginia Commonwealth University which was created by the General Assembly of Virginia during its 1968 session.

The other component of Virginia Commonwealth University, known as the Academic Campus, was the former Richmond Professional Institute (RPI). RPI began in September 1917 as the Richmond School of Social Work and Public Health under the leadership of Dr. Henry H. Hibbs.

The Academic Campus has grown until today it encompasses the Schools of the Arts, Arts and Sciences, Business, Community Services, Education, and Social Work.

The total university enrollment is over 17,000 with more than 2,400 students, interns, and residents receiving medical education on the MCV Campus. Presently the MCV Hospitals provide a bed complement of approximately 1,000.

PURPOSES AND OBJECTIVES OF THE UNIVERSITY

Purposes

Virginia Commonwealth University shall endeavor to provide an educational environment nurturing and stimulating teaching, research, and service. Sensitive to the needs of urban life in the Commonwealth, it will strive to promote the pursuit of knowledge and the dissemination of professional skills.

Objectives

To identify and anticipate urban problems, to advance experimentation and open-ended attitudes in their solution through appropriate research, and to develop the university as a

planning and resource center for urban living.

To commit itself to creative and varied programs of teaching, research, and consultation contributing to the improvement of the quality of life within urban communities.

To promote and develop programs of continuing and graduate education relevant to contemporary society.

To provide an educational climate which will stimulate in the student a lifelong commitment to learning and service; which will develop competence and motivation to work toward the realization of individual and community potentials; and which will set for the student an example of excellence.

To develop and maintain an environment of educational excellence that will attract and motivate faculty to pursue their work in accordance with the highest educational standards.

To recognize the imaginative power of the arts and humanities in reflecting the problems and aspirations of society and of the human condition, to acknowledge the role of the arts in changing behavior, and to provide opportunities throughout the university and the Commonwealth to maximize their relevance, both individually, in the self-realization of the student, and publicly, in exhibition and performance.

To complement existing institutions of higher learning by providing programs of a uniquely urban character, thus enhancing the educational opportunities of the Commonwealth.

EDUCATIONAL PURPOSES OF MCV/VCU

Overall Objective

The objective of the Medical College of Virginia of Virginia Commonwealth University is to provide an educational environment where men and women can prepare themselves for careers as practitioners, teachers, or researchers in the health and biological sciences.

General Objectives

1. To maintain an environment of educational excellence that will attract faculty and students interested in an institution maintaining the highest academic standards.

2. To promote an educational atmosphere that will develop in students: (a) desire and interest in lifelong learning, (b) intellectual curiosity, and (c) excellence in skills and

knowledge required for the solution of problems of health and disease.

3. To provide standards of clinical practice and scientific investigation that will serve students as examples throughout their professional careers.

ACCREDITATION

Virginia Commonwealth University is a member of and is accredited by the Southern Association of Colleges and Schools, the general accrediting agency for colleges in the region. All schools and courses at MCV/VCU are accredited by the agencies and organizations appropriate to the school or course concerned. In 1959 MCV became the first professional school of its kind in the region to be accepted into membership of the Southern Association of Colleges and Schools.

EDUCATIONAL PLANNING AND DEVELOPMENT PROGRAM

The MCV Educational Planning and Development Program (EPDP) assists educational units within MCV to define and accomplish their goals. Activities undertaken within the scope of this mission are quite varied but are generally described as: evaluation, faculty development, instructional development, and planning and administrative support.

Evaluation involves activities designed to assist faculty and administration in making better decisions about educational efforts. These include student achievement, supporting services, and teaching efforts. EPDP activity within this area includes working with college committees concerned with evaluation and reward of faculty, development of new ways to assess student performance, development of tools for program evaluation, etc.

Activities which assist faculty in improving skills and competence come under **Faculty Development**. The major thrust is the provision of workshops, seminars, and individual consultation designed to help faculty in their individual teaching roles.

Activities which assist faculty in developing a product, e.g., new instructional materials, revised curriculum, educational objectives, etc., are classified under **Instructional Development**.

Under **Planning and Administrative Support** come activities associated with the development of new programs and procedures for better resource management.

Much of EPDP's work is done by faculty collaboration within several MCV schools. In addition, resource sharing with the Department of Visual Education on the MCV Campus and the Center for Improving Teaching Effectiveness (CITE) on the Academic Campus is frequent.

Four faculty have their primary appointments within EPDP. In addition, seven others whose primary appointments are in other academic units, have joint appointments with EPDP.

CENTER FOR COMMUNITY HEALTH

The MCV/VCU Center for Community Health was established in recognition of the national and local concerns regarding the health status of the nation's population and the current barriers to the prevention of illness and the maintenance of good personal health. The center is primarily concerned with education, service, and research. The educational program develops and stimulates an awareness of the impact of social and other welfare problems on health and prepares students for participation with other health related professionals in interdisciplinary health services.

Service activities are provided to individuals in their homes through interdisciplinary teams of students working in collaboration with health or social service agencies in the community. The focus is on an holistic approach to patient problems through the 'team' approach to patient care and on the interplay between health and other social factors.

The third function of the center is research in health services delivery and community health problems. Such research is designed to assist in constructing and testing alternative models in health services delivery.

The center participates with the School of Medicine and the School of Nursing in a program for the training of family nurse practitioners who perform some functions normally done by family doctors, e.g., physical examinations, well baby care, patient education, long term management of chronic disorders, and management of some acute and emergency conditions. The Family Nurse Practitioner Program is designed to help meet the current deficit in primary care services which have been documented for both Virginia and the nation.

The administrative office of the center is located on the first floor of Sanger Hall.

MCV/VCU CANCER CENTER

The MCV/VCU Cancer Center, established as a clearly defined administrative entity in 1974, is the result of more than three years of vigorous planning by MCV/VCU faculty and administration. In fulfilling its mission, the Cancer Center coordinates the efforts of all departments and schools in oncology-related activities. Presently, the center involves over 100 faculty members from all MCV/VCU schools and the Departments of Biology, Chemistry, and Psychology and the School of Social Work on the Academic Campus.

The center does not provide a substitute for the clinical care now available, but strengthens and coordinates the existing facilities and services related to cancer.

One objective of the center is to coordinate and enhance the oncology educational programs at MCV. A second objective of the center is to become an effective demonstration center capable of offering multidisciplinary consultation services, educational programs, and specialized methods for diagnosis in the treatment of cancer, which are not generally available in the area. Another objective is the integration of basic and clinical oncology research with clinical cancer care in the center to allow a rapid translation of new laboratory findings into improved care for the cancer patient. In addition, the center develops strong community programs involving active participation by the public and practicing health professionals in the region.

The administrative offices of the MCV/VCU Cancer Center are located on the second floor of the Lewis L. Strauss Surgical Research Laboratory.

DEPARTMENT OF VISUAL EDUCATION

The visual education department offers services in support of patient care, teaching, and research. The centrally-organized department offers graphics services to the entire university. It operates a campus-wide television system in support of instruction and has general responsibility for the student self-study centers (media libraries) in Sanger Hall and the Lyons Building.

In addition to its technical support facilities, the department offers professional consultation services to the faculty in the planning and execution of teaching exercises.

LIBRARIES AND THEIR RESOURCES

The Virginia Commonwealth University Libraries consist of the James Branch Cabell Library on the Academic Campus and the Tompkins-McCaw Library on the MCV Campus. Both libraries have expanded space and services through major construction projects and provide a combined capacity for 1,360,000 volumes and seating for over 2,450. The university libraries are partial depositories for United States government documents.

The Tompkins-McCaw Library, with a strong collection in health sciences, is a graduate research library serving the MCV Campus. The James Branch Cabell Library, a general undergraduate library, serves the Academic Campus. Both libraries are available to all members of the university community. Services offered to students, faculty, and staff in the Tompkins-McCaw Library include: computer-based bibliographic searching, photo-copying service, interlibrary loan, and reference assistance on request. A brochure describing these and other services is available in the library.

OFFICE OF CONTINUING EDUCATION

Continuing education is one of the major purposes of Virginia Commonwealth University. In keeping with this purpose, numerous courses, workshops, institutes, and seminars, ranging from cultural enrichment programs to specific professional topics, are offered by the various schools of the university through the Office of Continuing Education.

Recognizing its responsibilities to the citizens of the Commonwealth of Virginia, the Office of Continuing Education also provides off-campus credit and on- and off-campus non-credit educational opportunities for employed adults.

Through a contractual agreement, the university maintains the Office of Continuing Education in the Holiday Inn/Downtown. Located at 301 West Franklin Street, it is about midway between the two VCU campuses. The office coordinates the availability and use of guest rooms, dining facilities, and conference space for participants in short programs offered by the various schools and departments in the university.

Many of the offerings of the Office of Continuing Education are announced via supplements to the daily newspapers. In addition, special courses and programs directed toward certain professional groups are announced by direct mailings to the specific groups.

Further information may be obtained by writing to: Virginia Commonwealth University, Office of Continuing Education, 301 West Franklin Street, Richmond, Virginia, 23220.

Central Animal Facilities

Animal care and procurement is supervised by a veterinarian who serves as the director of the Central Animal Facilities. These facilities are inspected and approved by the American Association for Laboratory Animal Care which certifies that care and treatment meet the most rigid standards. They are also regularly inspected by veterinarians from the U.S. Department of Agriculture.

Housing for small animals is available in quarters conveniently located near departments and at a large central holding area in Sanger Hall. There is also a 90 acre farm in Hanover County for large animals and for holding animals for long-term experiments or conditioning. A large laboratory, animal building, two barns, and a caretaker's cottage are located on this facility.

Central Biomedical Shops

Well-equipped mechanical and electronic shops for the construction and repair of mechanical and electronic instrumentation are located in Sanger Hall.

Biomedical Instrumentation Laboratory

Certain large and expensive equipment, which because of size and cost necessitate interdepartmental use, is available to all departments. Instruments presently available include: scintillation counters, gamma counters, electron microscopes, rapid kinetics spectrophotometer, atomic absorption-emission spectrophotometer, and electron spin resonance equipment.

Facilities

Sanger Hall is located on East Marshall Street between Eleventh and Twelfth Streets and with the recent completion of a new addition extends along Eleventh Street to Broad Street. Named in honor of Dr. William T. Sanger, third president of MCV, Sanger Hall houses the administrative offices of MCV/VCU, the teaching headquarters for the clinical medical faculty, and the basic science departments and research laboratories.

Patient care functions are carried out in six hospital buildings. **MCV West, North, East, and South Hospitals** have approximately 1,000 beds for inpatients, about 60 percent of

which are classified as private patients. In addition, the Nelson Clinic has 60 beds for self-care patients. The A. D. Williams Memorial Clinic building houses the majority of outpatient specialty clinics, with a few others located in nearby buildings. Total hospital admissions are approximately 33,000 per year; outpatient visits number over 280,000 and emergency room visits around 60,000. Extensive ancillary departments within the hospital complex provide support to the considerable volume of patient activity. Altogether, this large patient-care operation provides quite adequate resources for the teaching programs of the schools and courses.

The **Nursing Education Building**, originally a dormitory for nurses, provides administrative offices and classrooms for the Schools of Nursing and Allied Health Professions.

Randolph-Minor Annex is a former church building which provides teaching facilities for the Departments of Hospital and Health Administration and Medical Technology.

Randolph-Minor Hall, constructed in 1952 as a dormitory for student nurses, is named for Agnes Dillon Randolph (1875-1930) and Nannie Jacquelin Minor (1871-1934). Both were graduates of the School of Nursing and pioneers in phases of public health work. This building now serves as a housestaff residence and houses several outpatient clinics.

The **Egyptian Building**, designed by Thomas Stewart of Philadelphia, was the first building owned by MCV/VCU. Completed in 1845, it is considered one of the purest types of Egyptian architecture in the United States. Offices, laboratories, and the Baruch Auditorium (with a seating capacity of about 300) are housed in this building located at the corner of College and East Marshall Streets.

McGuire Hall and **McGuire Annex** are named for Dr. Hunter Holmes McGuire, founder of the University College of Medicine which consolidated with MCV in 1913.

Located on the north side of Clay Street between Eleventh and Twelfth Streets, these adjoining buildings primarily serve the School of Pharmacy and the Department of Pharmacology. A greenhouse is on the roof of McGuire Hall.

The MCV branch of the VCU Bookstore is located in the basement of McGuire Hall.

The **Wood Memorial Building** and the **Lyons Building**, named in honor of Dr. and Mrs. Jud B. Wood and Dr. Harry Lyons, dean of the School of Dentistry from 1951 until 1970, house the School of Dentistry. These ad-

joining buildings are located on Eleventh and Twelfth Streets respectively just north of McGuire Hall.

The **Dooley Building**, opened as a pediatric hospital, has been converted to house research laboratories.

The **Lewis L. Strauss Surgical Research Laboratory** accommodates a number of important research projects and the administrative offices of the MCV/VCU Cancer Center. It is located next to the Tompkins-McCaw Library on North Twelfth Street.

Hunton Hall, Formerly a housestaff residence, is at the northeast corner of Twelfth and Marshall Streets. It is named for Eppa Hunton, Jr., a member of the Board of Visitors from 1913 until 1932 and its chairman from 1925 until 1932. Located on part of the site for the new hospital being planned, Hunton Hall is scheduled for demolition.

The four **Residence Halls**, located at Tenth and Leigh Streets, provide offices for student life and student services personnel in addition to living quarters for men students. They are named **Warner Hall**, **Bear Hall**, **Rudd Hall**, and **McRae Hall**.

Cabaniss Hall is a 432-bed women's dormitory located southwest of the Jonah L. Larrick Student Center.

The **Jonah L. Larrick Student Center** is named for the former director of YMCA activities at MCV. On the first floor are the cafeteria and a smaller dining room for special events. The second floor houses a large lounge and exhibit area with smaller rooms for TV viewing, music listening, piano playing, games and activities, offices, and meetings.

Adjacent to the student center is the **MCV Gymnasium**, with extensive facilities for intramurals, recreation, and physical fitness.

The old **Student Union Building**, a former church, houses the MCV branch of the U. S. Post Office, the Campus Room Restaurant, and Employee Health Service.

Monumental Church, erected in 1812 on the site of the theatre building that burned on the night of December 26, 1811, claiming the lives of 72 people, was deeded by its congregation to the MCV Foundation in 1965 "as a chapel or religious center for persons of all creeds, denominations, or faiths, and for the other purposes of the College."

In addition to the major buildings, a number of smaller structures house various departments of the institution.

The major buildings are heated from the central heating plant, with tunnels carrying heating pipes and providing limited pedestrian traffic.

Endowment, Resources, Support, and Research

Although Virginia Commonwealth University is a state-supported institution, it is indebted to many friends for generous gifts and bequests that are vital to the successful performance of its mission in education, service, and research.

Realizing that untold numbers of medical problems remain unsolved, many people are engaged in research at MCV/VCU. Adequate funds and facilities for research afford an opportunity for contributing new knowledge applicable to the treatment of disease.

During the 1975 fiscal year, MCV/VCU received over \$15 million in non-state funds through federal and non-federal grants and contracts, gifts from individuals and foundations, and endowment income from the MCV Foundation and from other endowment funds. Most of this money is used for research and training activities.

MCV FOUNDATION

The Medical College of Virginia Foundation was incorporated under the sponsorship of the Board of Visitors of the Medical College of Virginia in 1949 as a non-profit, non-stock Virginia corporation.

The purposes of the foundation are to "aid, strengthen, and extend in every proper and useful manner the work, services, and objectives of the Medical College of Virginia, Health Sciences Division of Virginia Commonwealth University." Its affairs are managed by a Board of Trustees which has responsibility for the investment as well as the distribution and expenditure of the funds entrusted to it.

The Articles of Incorporation require that there be at least one trustee from the faculty, one from the Board of Visitors, and three from the alumni of the Medical College of Virginia, and that the chief administrative officer of the Medical College of Virginia of Virginia Commonwealth University be a trustee ex officio.

The foundation, which maintains an office in Sanger Hall, works closely with the university administration in the interest of and the discharge of its purposes as set forth above. It

is equipped to receive gifts, grants, contributions, and bequests to be used in support of foundation objectives.

For the year 1975-76, the trustees provided \$459,200 from unrestricted, designated, and endowment income for support of various programs.

A. D. WILLIAMS FUNDS

The estate of A. D. Williams, left in trust, provides an appreciable income each year to MCV. These funds are used in support of student scholarships, predoctoral fellowships (graduate students), summer student fellowships, postdoctoral awards to visiting distinguished scholars or academic fellows anticipating joining the faculty, and faculty stipends to MCV faculty members advancing their training. A portion of these funds is also used for grants to new faculty members joining MCV to aid in establishing their research. Funds made available from this trust are administered by a committee appointed by the associate provost and the Institutional Research Advisory Committee which makes recommendations on their use.

Student Life and Services

HOUSING FACILITIES

Male students live in a group of four dormitories located on the corner of Tenth and Leigh Streets near the northwest corner of the campus.

Women students live in Cabaniss Hall.

Rooms are furnished with beds, mattresses, study desks, chairs, and either chests-of-drawers or bureaus. Janitorial service is provided. The residence hall staff personally supervises all students.

The Jarrett Apartments, located at Laburnum Avenue and Nine Mile Road in eastern Henrico County, are for married students and housestaff.

Requests for information and applications for apartment rentals should be addressed to Coordinator of University Housing, Virginia Commonwealth University, MCV Station, Box 265, Richmond, Virginia 23298.

Students and members of the housestaff may get assistance from the Housing Office in locating satisfactory accommodations.

Housing information and applications will be sent by the Housing Office to all students as they are accepted for admission to MCV/VCU. Requests for additional housing

information should be made to: Coordinator of University Housing, Virginia Commonwealth University, MCV Station, Box 265, Richmond, Virginia 23298.

Dormitory room assignments are made for the period of an academic year which normally is two semesters.

When students are required to remain beyond the usual year, rentals will be charged on a prorated monthly basis. Reservations are made in advance for the full period or for such part of the period as may be approved specifically by the Housing Office.

A current rate schedule is available upon request from the Housing Office. Rent is payable in advance by the semester and refunds will be made only in accordance with the university policy as stated in the university catalog and housing contract.

STUDENT CENTER

The Jonah L. Larrick Student Center is a unique circular building consisting of two levels:

Lower Level—Dining Facilities: A cafeteria provides food on a contractual basis for students living in the dormitories and for off-campus students who elect to be on the meal plan. This contract will provide three meals each day, including Sundays, that the MCV Campus is officially open as shown by the calendar in the *Bulletin*. Students remaining after holidays and vacations begin, or who begin classes before the official dates shown, are able to purchase meals in one of the campus food facilities on an *a la carte* basis. A current contract price schedule is available upon request from the Office of the Comptroller or the Housing Office. This cafeteria is used on a limited basis also by faculty and staff when it does not conflict with the student schedule.

There is a small private dining room which may be reserved for private luncheons and dinner meetings. Arrangements to use this room, as well as for catering for social functions, are made through the director of food service.

Upper Level—Activities Area: A variety of activities and cultural and social opportunities are offered to students through the Larrick Student Center. A large lounge in the center is surrounded by smaller rooms. The lounge area accommodates up to 570 people for dances, social mixers, lectures, etc. The walls are lighted and equipped for hanging art exhibits. The smaller rooms include offices of

the student activities director, the MCV Student Government and Honor Council, the X-Ray (MCV yearbook), and two conference rooms which accommodate up to 50 people.

There are rooms for pool, table tennis, as well as cards, chess, piano playing, and record listening. One of the music rooms is equipped with a Scott stereo-radio-phonograph system, and another is equipped with earphones and has a selection of six channels: (1) phonograph, (2) AM/FM radio, (3,4,5) three eight-track tape decks, and (6) TV audio. Classical records are available in the office. AM/FM radio music is supplied to both levels.

The Student Center Advisory Board, comprised of students, faculty, staff, and alumni members, recommends policies, procedures, and programs for the Larrick Student Center and helps to identify student interests and needs.

Reservations for use of these facilities should be made through the Office of the Student Activities Director.

FINANCIAL ASSISTANCE

Insofar as money is available from private, state, and federal sources, university officials make a sincere effort to see that qualified students are not denied admission because of their lack of funds. These efforts are continued after admission, should a student's financial circumstances preclude his remaining at MCV/VCU. Because of the uncertainty in funding a number of federal aid programs for students in the health professions, students are urged to make every effort to obtain needed funds through their own local sources.

Application forms for financial aid, as well as the pamphlet *Financial Aid for Students* which contains complete information on financial aid, may be obtained on request to the Financial Aid Officer, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 244, Richmond, Virginia 23298.

Continuing students must file their applications with GAPSFAS (Graduate and Professional Schools Financial Aid Service) in Princeton, New Jersey, no later than **January 15** preceding the fall semester in which financial aid will be needed.

GAPSFAS applications from new students accepted prior to May 1 must be in the Financial Aid Office for evaluation by June 1. Applications will be received from students ac-

cepted after May 1 with the understanding that because of the lateness of the application, financial aid funds might not be available.

The Financial Aid Office has no funds available for foreign students unless they are in this country on a permanent visa.

HEALTH SERVICES

MCV/VCU offers a comprehensive program of prepaid medical care through the Student Health Service and a supplemental accident and sickness hospitalization insurance plan. Descriptive brochures are sent to each regularly enrolled student prior to the start of the academic year.

The Student Health Service is supported by a health service fee which is *required* of all regularly enrolled full-time students in medicine, dentistry and dental hygiene, pharmacy, nursing, basic sciences, medical technology, radiation science, physical therapy, health care management, hospital administration, and nurse anesthesia. The health service fee *is also required of all students living in university dormitories*. On the MCV Campus this applies to regular full-time students, part-time or special students, and students or trainees in non-degree programs such as cytotechnology, EEG technology and blood banking (for fees, see page 15). Part-time students who do not live in university dormitories are not eligible for care in the Student Health Service.

A university sponsored student accident and sickness hospitalization insurance plan supplements the benefits available under the Student Health Service and provides reasonable protection at moderate group rates against the high cost of hospitalization and treatment for serious illness and accident. The insurance plan is voluntary but is strongly recommended for all students who do not already have comparable coverage. Married students may enroll their spouses and dependent children. Part-time students not living in university dormitories are not eligible for the insurance plan.

Every new student and every student re-entering after an absence of one year or more is required to have a pre-entrance physical examination. Health records, which are provided, must be properly completed and returned to the Student Health Service prior to the beginning of school. Any remediable defects should be corrected before entering the university.

POSTAL SERVICE

All mail should be addressed to the Medical College of Virginia, Virginia Commonwealth University, MCV Station, Richmond, Virginia, 23298. MCV Station, a contract branch of the United States Postal Service, is equipped to handle the usual business conducted in an official post office. Window service is offered Monday through Friday from 8 a.m. to 5 p.m.

All dormitory residents have only dormitory mail boxes, and their mail should have the name of the dormitory and room number on it.

Students living off campus should have mail sent to their local addresses.

Students in some programs are assigned MCV post office boxes for the convenience of the university and are so notified by their respective schools.

A notary public is located at the post office.

THE STUDENT BODY ORGANIZATION

The Student Body organization on the MCV Campus was formed to promote college activities, a concern among students for each other, and a greater identification with the college; to settle all affairs which affect the best interest of the student body; and to attain those things that make the college greater in every way.

The governing body is the Student Council which is composed of the officers of the Student Council, representatives from each class of each school on the MCV Campus, class presidents, officers of the yearbook staff, and co-chairmen of all standing committees.

HONOR CODE

The Student Body organization, believing that self-government in college is fitting preparation for self-government in life following graduation, conducts its affairs by means of an honor system under which every student is assumed to be trustworthy and unwilling to do anything dishonest or dishonorable. The honor system was inaugurated by students during the academic year 1895-1896 and while procedures have been modified, the essential spirit of the system remains unchanged.

Any student failing to live up to the principles of the honor system by lying, cheating, or stealing is eliminated from the student body. Judgment is made by the Honor Council which is elected by the student body. All students must support the Honor Code and report infringements thereon to the Honor

Council. The following pledge is posted in each classroom and applies to all examinations unless otherwise stated by the instructor: "On my honor, I have neither given nor received aid on this examination nor am I aware of any breach of the Honor Code." Each student, as a condition of matriculation at the MCV Campus of Virginia Commonwealth University agrees to abide by and uphold the Honor Code. A detailed description of the Honor Council's rules and procedures is available upon request to the Office of Student Government.

EXTRACURRICULAR ACTIVITIES

Student Center (see page 11).

MCV Campus Gymnasium and Intramurals

The gymnasium offers a full recreational program for students, housestaff, and faculty. The gym contains three basketball courts, volleyball courts, two tennis courts, two handball-paddleball courts, two squash courts, a weight room, an exercise room, a lounge-game room, and locker and shower facilities. Students may check out equipment to be used in the various facilities. Special gymnastics equipment, boxing bags and gloves, and a steam bath complete the facilities.

MCV students may use the swimming pool located in the Franklin Street Gymnasium on the Academic Campus. Student ID cards are required.

An extensive intramural program is offered to men and women students and housestaff. Team sports include flag football, basketball, three-man basketball, volleyball, slow and fast-pitch softball, and track. Individual tournaments are held in tennis, handball, paddleball, squash, table tennis, billiards, badminton, swimming, wrestling, one-on-one basketball, and basketball free-throw.

Club sports include tackle football, rugby, tennis, karate, and fencing. Karate and self-defense classes are held in the MCV Campus Gymnasium. Various elective classes are offered for credit to men and women through the Department of Physical Education on the Academic Campus. Noncredit classes are offered for students, faculty, and faculty wives in tennis and physical fitness.

Religious Activities

All churches in Richmond welcome our students. Monumental Church, located on the MCV Campus was designed by an early Amer-

ican architect, Robert Mills, and the building has been designated as a Virginia Historic Landmark and is listed in the National Register of Historic Places. It is used for special services and for other student group assemblies. It is available for use by the various religious workers. These programs are coordinated by a full-time associate professor of ethics who serves as director of religious activities.

At the present time the building is undergoing restoration and will have only limited use until the work is completed.

CULTURAL OPPORTUNITIES IN RICHMOND

The student affairs offices assist in planning extracurricular activities for the intellectual, cultural, religious, and recreational life of students.

The resources of the Virginia State Library are available across Broad Street from the MCV Campus as well as those of the Richmond Public Library, located a few blocks from both campuses, with its loan collection of records, art, and books.

Near the MCV Campus is the Valentine Museum, with its excellent historical displays of early Richmond, and the White House of the Confederacy with memorabilia of the Civil War.

Students have the opportunity to purchase season tickets to the imaginative programs of the Virginia Museum of Fine Arts. These include drama, chamber music, outstanding films of the past, and ballet, as well as fine art exhibits.

The Richmond Symphony has been the recipient of enthusiastic support of music critics and the public alike.

Various dinner-theaters in the area, as well as the Shafer Street Theatre on the university's Academic Campus, provide delightful evening entertainment.

The Richmond Public Forum and Kiwanis Travelogues provide additional cultural-educational programs. Season tickets are available at nominal cost.

The 12,176-seat Richmond Coliseum is located west of the MCV Campus. The coliseum programs include sports events, spectaculars, circuses, musical groups, and various other stage events.

ALUMNI OF THE UNIVERSITY

Virginia Commonwealth University has 32,000 alumni of whom over 12,000 are graduates of MCV/VCU. These *alumni live in each*

of the states and several foreign countries. The Alumni Activities Office coordinates alumni functions and serves as a resource center for those who studied here.

Through the annual fund, alumni are given the opportunity to support the various schools and departments in the university. Such support provides resources for innovation and the development of educational programs.

The Medical College of Virginia Alumni Association of Virginia Commonwealth University, organized March 28, 1889, has functioned continuously since that time. It was incorporated in 1943. The association is housed in the historic Maupin-Maury House at 1105 East Clay Street.

The university's Alumni Activities Office and the Alumni Association of MCV, in cooperation with the Nursing Alumni Association and the Hospital and Health Administration Alumni Association, keep alumni informed about all aspects of the programs at MCV/VCU.

Inquiries about alumni activities should be addressed to the Alumni Activities Office, 828 West Franklin Street, Richmond, Virginia 23284, or telephone (804) 770-7124.

INTERNATIONAL STUDENTS AND VISITORS

The university subscribes to the intent and purpose of the Mutual Educational and Cultural Exchange Act, the regulations of which permit international students and visitors to become a part of the university community until their objectives are met.

In order for the university to qualify with the United States government as a place of training for international students and visitors, the university is obligated to determine: (a) that applicants have the necessary ability and educational backgrounds to benefit from their experiences at this institution; (b) that their proficiency in English is sufficient to carry a full program of study or training as this institution and community have no resources for teaching English as a second language; and (c) that they have all the funds necessary for their expenses for the entire period of their stay without resorting to employment while in the United States. The university has no financial resources for foreign students.

Foreign students who do not hold visas for permanent residence cannot qualify as residents of Virginia and must pay the non-resident tuition charges.

Once a foreign national has been admitted, he or she is treated as any other student except for the immigration and naturalization rules and regulations which take precedence over the university rules. The university cannot register a foreign national until the Immigration and Naturalization Service officially gives its approval.

The university has a foreign student advisor who meets with all foreign students after their arrival, counsels and advises them in their adjustment to the university, and prepares the necessary government forms needed by foreign nationals to maintain correct visa status with the U.S. government.

Foreign students residing outside the United States should allow six months between application for admission and actual matriculation at the university.

Admission Regulations

The Medical College of Virginia of Virginia Commonwealth University does not limit applications to residents of the Commonwealth of Virginia; however, priority is given to those who are legal residents. Candidates are considered without regard to race, creed, sex, or national origin.

For detailed information regarding admission requirements and procedures, refer to the appropriate school sections of this bulletin.

Tuition, Fees, and Expenses

The university reserves the right to revise or alter all fees, regulations pertaining to student fees, and fee collection procedures whenever such revisions or alterations are deemed necessary. Fees are not returnable except under most unusual circumstances and then only on the recommendation of the dean concerned. See Refunds and Rebates on page 17.

All fees are due and payable in full at the MCV Campus Business Office, 520 N. Twelfth Street, Richmond, Virginia 23298, prior to registration as required and stated in each semester's billing. Students registering pay the fees shown on page 15, plus special fees and deposits as required. Completion of arrangements with the Business Office for payment from accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration.

1976-77 EXPENSES—MEDICAL COLLEGE OF VIRGINIA OF VIRGINIA COMMONWEALTH UNIVERSITY

Program	Tuition Per Academic Year		Consolidated Fees	Tuition Deposit	Text-books	Estimated Cost Equipment, Instruments, Supplies	Lab, Coats, Uniforms	Miscellaneous Fees and Costs	Totals	
	Resident	Non-Resident							Resident	Non-Resident
Medicine: *(1)										
M-1	\$2,215	\$3,620	140	\$100	\$325	\$325	\$25	—	\$3,130	\$4,535
M-2	2,215	3,620	140	—	225	50	50	—	2,680	4,085
M-3	2,215	3,620	140	—	150	75	—	—	2,580	3,985
M-4	2,215	3,620	140	—	150	150	50	—	2,705	4,110
Dentistry: *(1)										
D-1	2,215	3,620	140	200	325	1,500	30	—	4,410	5,815
D-2	2,215	3,620	140	—	300	1,050	20	—	3,725	5,130
D-3	2,215	3,620	140	—	125	400	20	—	2,900	4,305
D-4	2,215	3,620	140	—	75	75	15	—	2,520	3,925
Dental Hygiene:										
DH-3	780	1,560	140	100	220	200	110	—	1,450	2,230
DH-4	780	1,560	140	—	175	70	75	—	1,240	2,020
Pharmacy: *(1)										
P-3	920	1,700	140	50	200	20	25	—	1,305	2,085
P-4	920	1,700	140	—	135	—	15	—	1,210	1,990
P-5	920	1,700	140	—	200	—	20	—	1,280	2,060
Pharm. D.	920	1,700	140	50	250	—	50	—	1,360	2,140
Nursing:										
N-3	780	1,560	140	50	175	75	100	\$100*(2)	1,370	2,150
N-4	780	1,560	140	—	100	50	—	130*(2)	1,200	1,980
Graduate:										
G-1, G-2, G-3, G-4	720	1,440	140	—	—	VARIABLE	—	3500 *(3)	4,360	4,670
Allied Health Professions:										
Health-Care Management: *(6)										
HCM-1	780	1,560	140	35	140	30	—	20	1,110	1,890
HCM-2	780	1,560	140	—	140	30	—	35	1,125	1,905
Hospital Administration:										
HA-1 (includes 2 summer sessions)	1,658	3,316	140	50	300	200	—	—	2,298	3,956
HA-2	435	870	140	—	—	50	—	500*(4)	1,125	1,560
Medical Technology: *(6)										
MT-3	780	1,560	140	35	150	30	155	—	1,255	2,035
MT-4	780	1,560	140	35	150	30	—	—	1,100	1,880
Nurse Anesthesia: *(6)										
NA-1	500	800	140	10	220	75	—	—	935	1,235
NA-2	250	400	140	—	30	—	—	—	420	570
Occupational Therapy: *(6)										
OT-3	780	1,560	140	35	125	75	—	—	1,120	1,900
OT-4	780	1,560	140	—	125	75	50	—	1,170	1,950
Patient Counseling: *(6)										
Full-Time	300	500	—	—	—	—	—	—	300	500
Summer	150	300	—	—	—	—	—	—	150	300
Physical Therapy: *(6)										
PT-3	780	1,560	140	35	250	30	115	75	1,390	2,170
PT-4	780	1,560	140	—	75	15	115	650*(5)	1,775	2,555
Radiologic Technology:										
RT-2	780	1,560	140	50	100	5	130	5	1,160	1,940
RT-3 (Includes summer semester)	780	1,560	140	—	100	5	—	5	1,030	1,810

*(1) See "Tuition Charges Per Student," page 16.

*(2) Transportation cost of clinical assignments and RN class pin.

*(3) Estimated total cost for full-time graduate students for all expenses other than tuition and consolidated fee.

*(4) Transportation cost estimate.

*(5) Approximate cost of clinical assignments.

*(6) Additional tuition charge made for summer clinical programs; details available from department chairman.

Unless arranged through the school and the Office of Registrar Services, students failing to register during the regular registration periods are subject to a late registration fee of \$10.

No degree will be conferred upon any candidate prior to the payment of all tuition, fees, and other indebtedness to any school of the university.

APPLICATION FEE AND DEPOSITS

Application Fee: Each student applying for admission or readmission to the university shall pay a \$10 nonrefundable fee except those applying to the School of Medicine who pay a \$25 nonrefundable application fee. This fee shall accompany the application form sent to the Admissions Office.

Tuition Deposit: On being notified of his appointment to the entering class, the applicant may be required to pay a deposit, depending on the school, on tuition for the first year. This fee may not be refunded but is applicable to first semester tuition. Authorization to matriculate constitutes an agreement for the reservation of a place in the class entering for the session cited.

Dormitory Security Deposit and Damage Fee: A \$50 dormitory deposit is required upon receipt of official notification of acceptance. This deposit is *not* applicable to the room and board charges, but remains on deposit to be applied toward possible room damage. As such, the deposit shall be returned, minus any damage charges, when the student terminates his connection with the university.

TUITION CHARGES PER STUDENT

The tuition charges shown on page 15 are for the academic year 1976-77. Educational costs are subject to similar price adjustments found in the cost of other commodities; therefore, fees may change for the academic year 1976-77 and 1977-78.

The tuition rates 1976-77 for medicine, dentistry, and pharmacy have been set in anticipation that federal support will continue at present levels or higher. Should federal capitation grant funds support be reduced by 3 percent or more it will be necessary to increase tuition rates by the same dollar amount as the reduction in federal support.

Special Students: A student who has been given special permission by the dean of certain schools to enroll as a special student shall pay the required fees established by the dean concerned and this fee shall not be less than the fees of a part-time student paying on a semester hour basis.

Summer Students: Students enrolled in certain health science programs in which full-time study extends into the summer session will be assessed additional charges for the summer program, field work, or clinical affiliations as may be appropriate. All other students, graduate and undergraduate, registering for summer courses will pay the current semester hour credit rate of tuition.

PART-TIME AND SUMMER STUDENTS

	Non-Resident resident	
	Rate per semester hour credit	
Health sciences program		
Medical technology, pharmacy, nursing, physical therapy, radiology technology, dental hygiene, and health care management	\$30	\$60
Basic sciences—graduate	40	58
Hospital and health administration	48	96

Virginia Student Classification: The law affecting Virginia residents is as follows: "No person shall be entitled to the admission privileges, or the reduced tuition charges, or any other privileges accorded only to domiciliaries, residents or citizens of Virginia, in the state institutions of higher learning unless such person is and has been domiciled in Virginia for a period of at least one year prior to the commencement of the term, semester or quarter for which any such privileges or reduced tuition charge is sought, provided that the governing board of such institutions may set up additional requirements for admitting students." VCU has no additional requirements for Virginia residency. Students may apply to the Office of the University Registrar for Virginia residency status through forms available from the Office of Registrar Services.

FULL-TIME STUDENTS

Undergraduate students registering for either the fall or spring semester for 12 or more semester hour credits are billed full time rates.

Graduate students registering for either the fall or spring semester for nine or more semester hour credits are billed full time rates.

Students with an excess of 19 semester hour credits or an excess over their full time specialized programs will be charged part-time rates as listed for part-time students for each hour over the required maximum. Students enrolled in Health Science programs must ob-

tain permission from the dean of the school in which they are enrolled before registering for additional courses. If the course is not related to the specialized program, a part-time fee will be charged plus any required fee for the course.

SPECIAL CHARGES

Consolidated Fee: Because of specialized programs, all full-time students are required to pay a consolidated fee. Students who were not registered for the first semester and enter the second semester as full-time students will be required to pay a prorated consolidated fee. Also, any undergraduate student living on campus, even though part-time, and any student accepted as a part-time student working for a degree within a 12 month period must pay a consolidated fee once within that period. The consolidated fee covers cost of post office, physical education fee, identification card, name tag, certain supplies, laboratory fees, student health service, membership in athletic association, annual subscription to the *X-ray* (student annual), participation in any special function financed by the student body organization, and graduation fees. See page 15.

Graduate Studies Matriculation Fee: Regularly enrolled candidates for the M.S. degree in residence at MCV will pay full tuition and fees for the *first two years*. Candidates for the Ph.D. degree will pay full tuition and fees during the *first four years* of residency at MCV. The student will then be placed on a "Matriculation Basis Only" with a charge of \$50 per year with a time limit for completion of requirements, five years for the M.S. degree and seven years for the Ph.D. degree. The "Matriculation Only" student does not register for any credits and will not be eligible for other student benefits while in residence at MCV.

NON-RECURRING CHARGES

Application Fee.....	\$10*
Conditional Examination Fees.....	5 per examination
Graduation Fee	14**
Identification Card Replacement.....	3 each
Late Registration Fee	10 each
Readmission Fee.....	10 each

*Application fee for School of Medicine—\$25.

**Assessment of part-time degree-seeking students not covered under Consolidated Fee.

Transcripts

(Student Records)..... 1 each

Tuition deposits required—Apply to first semester tuition. See chart on page 15.

FEES FOR DORMITORY RESIDENTS

The charges for matriculation, tuition, and other instructional services are the same for dormitory residents as for commuting students. Other dormitory resident charges for the academic year:

Room Rent	
Cabaniss, McRae.....	\$660
Rudd, Bear, and Warner	630
Dormitory Security Deposit and	
Damage Fee.....	50
Linen Service Fee	30
Meals	
Student Board Plan	
(21 meals per week only)	660
*** Student Health Service Fee	52

The fees for dormitory rent, student board plan (meals), linen service, and student health service fee are payable at the time tuition and student fees are due. Dormitory contracts must be signed and damage deposit paid prior to registration.

INSURANCE

The university offers to its students an approved insurance plan providing substantial benefits at group rates. The Student Hospital and Accident Insurance Plan is written through North American Assurance Society. The university recommends but does not require that all students enroll in the Student Group Insurance. Part-time students not living in the dormitory are not eligible for group insurance.

REFUNDS AND REBATES

A full- or part-time student who withdraws in good standing shall be entitled to a refund of a portion of his tuition, room, and board fees for the semester in which he is currently enrolled. All other fees are non-refundable.

Request for Refund. A request for a refund shall be made in writing to the dean of each school and dean of student services before said request can be considered. The following

***The Student Health Service Fee is required of *every student residing in university dormitories*. This applies not only to regular full-time students but to part-time or special students and students or trainees in non-degree programs such as cytotechnology, blood banking, and EEG technology. For regular full-time students the Health Service Fee is included in the Consolidated Fee. See page 12.

For further information on student housing see page 10.

policy governs the refund of room, board, and tuition fees:

1. A student who fails to register or is denied permission to register will be entitled to a full refund of tuition, room, and board if paid in advance. First-year students who fail to register forfeit deposit in tuition.
2. Students entering involuntary military service of the United States will be granted a refund on a prorated basis.
3. A student will be entitled to a refund of 80 percent of his room, board, and tuition fees upon withdrawal before the end of the first week of the term (seven consecutive calendar days beginning with the first day of classes) and a decrease of 20 percent each week thereafter up to and including the fourth calendar week. **NO AMOUNT WILL BE REFUNDED FOR WITHDRAWAL AFTER THE FOURTH CONSECUTIVE CALENDAR WEEK OF THE TERM.**

The actual date of withdrawal will be certified by the office of the school's dean; and refund, when appropriate, will be computed based on that certified date. Students must complete the official University Withdrawal Form S which may be obtained from the Office of Registrar Services.

Contracts for room and board (except in cases involving contracts initiated during the spring and summer terms) are for a two-semester period. If a resident voluntarily withdraws from the university residence halls without clearance from the Office of the Dean of Student Services but remains at the university, he will be responsible for full room and board fees. Subletting is not permitted. Exceptions to the above policy can be made only by the Office of the Dean of Student Services.

DELINQUENT ACCOUNTS

The university will not issue a degree, transcript of grades, or grade reports to any student who has not paid all charges in full. Students whose accounts are not paid in full may not be admitted to final examinations at the end of semesters.

A. D. WILLIAMS AWARD

An annual stipend may be made, on the nomination of the faculty, to a student in each class of the degree programs who demonstrates by virtue of high scholastic attain-

ment and professional performance, unusual promise and ability.

General Academic Regulations

ADVISING PROGRAM

Students are responsible for the proper completion of their academic program. They should be familiar with the university bulletin, including general academic regulations and any other supplementary academic regulations presented in their individual school section. The offices of the deans and department chairmen, in cooperation with the faculty, endeavor to follow each student's academic progress, and students are encouraged to seek counsel whenever there is a need. If an advisor is unable to resolve a problem satisfactorily, the student will be referred for further advice as is deemed appropriate and necessary.

Attendance/Continuance Policies

Attendance and continuance policies vary among the individual schools and may be found under the appropriate sections in this bulletin.

CHANGE OF MAJOR

Students wishing to change their major area of concentration must have the approval of the dean of the school and admissions committee, where appropriate, and the chairman of the department to which the student is applying.

CHANGE IN REGISTRATION

Students registered for a planned program are expected to maintain their registration except for special reasons. Should a change of program be deemed advantageous to the student and the school by the appropriate school dean, the student may make the change during the add/drop period after the beginning of classes. Changes in registration are performed at the Office of Registrar Services by the following procedure:

(a) An add/drop form, obtained at the Office of Registrar Services, is used to add or drop courses and must be signed by the student's advisor, department chairman and dean.

(b) Courses dropped during the add/drop period do not become part of the student's permanent academic record.

Following the add/drop period no courses may be added. Courses may be dropped by obtaining the proper form from the Office of Registrar Services which must be signed by the student's advisor, department chairman, and dean. Courses dropped after the add/drop period will remain a part of the student's permanent academic record and will carry grades of "W", "WP," or "WF." Failure to comply with the above procedure when a student ceases to attend class will result in a grade of "WF" assigned by the Office of Registrar Services unless a grade of "F" is assigned by the instructor. A course may be dropped during the last three weeks of instruction only under unusual circumstances and with approval of the department chairman and dean. (For grade definitions, see pp. registrar in the absence of a failing grade awarded by the professor.

CLASSIFICATION OF STUDENTS

Students at the MCV Campus of Virginia Commonwealth University are classified as undergraduates, graduates, and first professionals as follows:

Undergraduates, except pharmacy—

Freshmen earned 0 to 23 credits

Sophomores earned 24 to 53 credits

Juniors earned 54 to 84 credits

Seniors earned 85 credits and above

School of Pharmacy—

Students are promoted by the block system and are not classified according to credit hours. (See p. 62)

Graduate students who have earned a baccalaureate degree and are enrolled in master's or doctor's degree programs (not including first professional degrees), are classified as follows:

First Year—enrolled in master's degree program

Advanced—enrolled in a doctoral degree program.

First professional students are enrolled in a program leading to the first professional degree in dentistry or medicine.

Special students are non degree-seeking students permitted to enroll in a credit course or courses and students enrolled in credit courses leading to a certificate of training.

DEGREE REQUIREMENTS

Candidates for degrees are eligible for graduation upon completion of their school's requirements in effect at the time of a first registration, provided requirements are met

within the time limit specified by the school not to exceed a period of seven years. Students failing to satisfy the time requirement shall satisfy requirements in effect at the time of reacceptance into the degree program.

All degrees are conferred by the VCU Board of Visitors upon recommendation of the faculties of the various schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

Candidates for degrees to be conferred at the close of the second semester must be present to receive their degrees unless excused by the deans of their schools. No individual may be exempt from this regulation.

Graduate and Professional Degrees. Degree requirements are specifically outlined in the various schools' sections in this bulletin.

General Undergraduate Degrees. In addition to the course requirements indicated in the curriculum outlines, candidates for degrees are governed by the following policies:

Grade Point Average. An overall grade point average (GPA) of at least 2.0 (a "C" average) is required on all work presented for either the associate or bachelor's degree.

Required Credits. The total number of semester hour credits required for graduation depends on major area of concentration and the type of degree.

Upper Level Courses. A minimum of 45 credits is required in 300 and 400 level courses for bachelor degrees. Transfer credits from two-year institutions may not be applied to this requirement.

Resident Requirement. Degree candidates are required to complete the last 30 credits for a bachelor's degree and the last 15 credits for an associate degree at this institution.

Double Major Concentration. A double major is the fulfillment of requirements in two majors. For further information consult the Virginia Commonwealth University Academic Campus Bulletin.

GRADING SYSTEM

Grade Reports. An official university grade report, showing the student's standing in courses and grade point average, will be mailed each semester and at the end of the Summer Sessions to the student's mailing address as designated on the registration form.

Grade Point Average. The grade point average, reflecting semester and/or cumulative work as specified by each school is computed by dividing the number of grade points

earned by the number of semester hours attempted for which grades "A" through "F" or "WF" have been assigned. The GPA and class standing figures are intended to assist students in analyzing work performance and in determining areas requiring greater attention. Their purpose is not to encourage competition among students.

GRADES

Work quality is measured by the four-point grade system with the following equivalents:

GRADE SYMBOL AND MEANING	GRADE POINT VALUE PER SEMESTER CREDIT
A - Excellent	4.0
B - Very Good	3.0
C - Average	2.0
D - Low Pass	1.0
F - Failure	0.0
I - Incomplete	—
P - Pass	—
AU - Audit	—
W - Withdrawn	—
WP - Withdrawn passing	—
WF - Withdrawn failing	—
H - Honors	—
PR - Progress	—
NG - Administrative grade assigned when no grade submitted by the instructor.	

I - Incomplete—The grade of incomplete is assigned when course requirements, because of circumstances beyond the student's control, cannot be met by the end of the semester. The awarding of an "Incomplete" presupposes an understanding between the instructor and the student. Routine use of the grade of "I" is discouraged.

(a) With the exceptions of the Schools of Medicine and Dentistry, the maximum limit for the removal of an "Incomplete" is the end of the last day of classes of the semester (or Summer Session) following the term in which the "Incomplete" was incurred. For programs leading to either the M.D. or D.D.S. degrees, the maximum time limit is the last day of classes of the second following semester after the semester of registration in the course or specified project. At the end of the specific semester an unremoved grade of "Incomplete" is automatically changed to a failing grade. Any exceptions to this regulation must be extraordinary in nature and must be approved by the dean of the school involved upon the recommendation of the instructor; a written statement must be filed with the Office of Registrar Services.

(b) The "Incomplete" will not be computed into the student's grade point average.

(c) If course requirements are not completed by the end of the specific semester, a grade of "I" or "F" will be assigned.

W = Grade of withdrawn—The grade of "W", denoting a student's withdrawal from a course, will be assigned to any course dropped after the official add/drop period but prior to the mid-semester point (eight weeks after first day of classes). The grade of "W" will appear on the student's academic record but will not be counted as work attempted or computed into the GPA.

WF = Grade of withdrawn, failing—Withdrawn failing indicates that a student was failing the course at the time of an official drop, after the mid-semester point and prior to the last three weeks of class instruction of a semester. The grade of "WF" is included in the credit hours attempted by a student during a semester, whereas grades of "I," "W," and "WP" are not.

WP = Grade of withdrawn, passing—Withdrawn passing indicates that a student was passing the course at the time of an official drop, after the mid-semester point and prior to the last three weeks of class instruction of a semester.

AU = Grade of audit—Upon the approval of the student's advisor and the instructor and when class size permits, a student may register for a course on an audit basis. Audit students are charged the regular rate of tuition and fees, and audit courses are counted as a part of the student's semester credit hour total. A student auditing a course is subject to attendance regulations and is not required to take tests or the final examination. A grade of "AU" will be entered on the academic record of all students enrolled for audit.

A change in registration from "audit" to "credit" must be effected during the add/drop period. A course taken for audit cannot be given credit at a later date. achievement. Courses assigned the honors grade will not be computed into the grade point average.

P = Grade of Pass—Awarded as a grade for certain courses to denote satisfactory completion of requirements. Courses assigned the grade of "P" will not be computed into the grade point average.

PR = Grade of Progress—Assigned as an interim grade for certain continuing courses, research, or thesis projects which run over several grade reporting periods. The "PR"

indicates that the course or project is not expected to be completed in a single semester. The grade carries no connotation of quality of work performance. Upon completion of the course or project, a final grade will be assigned.

SCHOLARSHIP HONORS

Dean's List. For certain schools, students are placed on the dean's list for one semester if they have made a grade point average of 3.50 in the preceding semester, based on a minimum load of 15 credits with no grade below "C." Students with grades of incomplete or absent from the final examination are not eligible for the dean's list.

Graduation Honors. Candidates for degrees in certain schools may be eligible for special scholarship recognition under the following conditions:

High Honors. Students with a cumulative grade point average of 3.6 or above on all credits attempted toward the degree awarded.

Honors. Students with a cumulative grade point average of 3.3 or above on all credits attempted toward the degree awarded.

Graduation honors for medical students will be determined by the Medical School Promotion Committee.

A transfer student, to qualify for graduation honors for the baccalaureate degree, is required to complete a minimum of 45 credits at VCU with a scholastic average of 3.6 for high honors or 3.3 for honors. Performance at other institutions must be of sufficient quality to sustain the above averages.

Recognition of graduation honors will be made on the student's diploma, permanent academic record, and in the commencement program.

STUDENT LOAD

First professional students (seeking M.D. or D.D.S. degrees) are always defined as full-time students unless specifically designated otherwise by the individual school dean.

Except in the School of Medicine, a semester credit, the unit by which courses are measured, is defined as one hour per week of lecture-recitation or not less than two hours per week of laboratory work throughout a semester.

Graduate Level

All full-time graduate students are expected to register for 12 semester hour credits per semester, including research. As an example,

students who are registered for 10 credits in formal courses are expected to undertake two credits in research under their advisors or other approved faculty members. Students registered for nine or more semester hours are billed for full tuition.

Undergraduate Level

Full-time Students. The normal full-time student load constitutes a minimum of 12 credits. For further details, see Academic Campus Bulletin.

Part-time Students. A student is classified as "part-time" if during any semester he is registered for no more than 11 credits. The term "part-time" applies to degree-seeking students as well as to nondegree-seeking ("special") students.

TRANSCRIPTS

Permanent academic record or student record folders will not be released from the registrar's office except in very special instances and in conformity with legal requirements.

Official transcripts of a student's academic record will be issued only upon the written request of the student.

A charge of two dollars will be made for each transcript.

Transcripts given directly to students do not carry the university seal and are not official. The seal is attached when the transcript is mailed directly from the university to the receiving party.

WITHDRAWAL FROM THE UNIVERSITY

Voluntary withdrawals from any of the schools or programs must be approved in writing by the dean and by the comptroller; otherwise, a student will not be entitled to honorable dismissal.

Students finding it necessary to withdraw before the end of a semester must complete an official university withdrawal form obtained from the Office of Registrar Services.

For students officially withdrawing from the university before mid-semester (end of the eighth week), the permanent record will indicate a grade of "W" for each course being pursued.

For students officially withdrawing after mid-semester (end of the eighth week) and prior to the last three weeks of class instruction of a semester, the permanent record will indicate grades of "WP" or "WF" assigned by the individual instructors of courses being pursued at the time of withdrawal.

For students withdrawing without permission, the permanent record will carry a notation, "Withdrawn Unofficially," and the grade of "WF" will be assigned for each course pursued at the time of unofficial withdrawal.

TERMINATION OF ENROLLMENT

The university reserves the right to terminate the enrollment of any student for unlawful, disorderly, or immoral conduct, or for persistent failure to fulfill the purposes for which he was matriculated. Any student whose relations are so severed forfeits all rights and claims with respect to the institution.

In addition to those standards of conduct described in the *Rules and Procedures of the University* and the *Medical College of Virginia Honor Code*, a student enrolled in MCV/VCU may be dismissed from the school in which he is enrolled for failure to meet academic requirements prescribed by his school or failure to exhibit the attitudes and skills deemed necessary to function within his chosen professional practice. Virginia Commonwealth University recognizes its responsibilities to the health professions and to the consumer of health services. Therefore, any action by a student of MCV/VCU considered to be unprofessional conduct according to the codes of ethics and the laws and regulations governing the student's chosen profession, shall constitute cause for disciplinary action.

Unprofessional conduct includes, but is not limited to:

1. Fraud or deceit in gaining admission to MCV/VCU, i.e., false or obviously misleading representations on the admissions application.

2. An act that violates the established legal standards regarding conduct of one person towards society, i.e., stealing, lying, cheating, and slander.

3. Conviction of a felony involving moral turpitude.

The individual health sciences schools recognize and support the statements set forth by the licensing boards of the respective health professions as they relate to examination, licensure, and the practice of each profession. When applicable, these standards will be used in determining a student's eligibility for continuance in or readmission to MCV/VCU.

LIMITATIONS ON BULLETIN PROVISIONS

All rules and regulations set forth in this catalog will apply until further notice. The right is reserved to make changes in courses of study, fees, rules and regulations governing the conduct of the work in all schools and programs, faculty and staff, and classification of students whenever university authorities deem it expedient or wise to do so.

Identification of Symbols for Course Listings

I—a course given in the first semester

II—a course given in the second semester

I, II—a course given in each semester

I and II—a course continued through two semesters

S—a course given in the Summer Session

LH—lecture hours per week

Lab H—laboratory hours per week

Cl H—clinical hours per week

SH—semester hour credit

PR—prerequisite

CR—corequisite

Abbreviations

AEN—Art Education

AHP—Allied Health Professions

ANA—Anatomy

BAS—Basic Sciences

BIC—Biochemistry

BIO—Biology

BIP—Biophysics

BIS—Biostatistics

BUS—Business

DEH—Dental Hygiene

DEN—Dentistry

DTP—Division of Team Programs

EDU—Education

END—Endodontics

GEN—Human Genetics

GPD—General and Preventive Dentistry

GRS—Graduate Studies

HCM—Health Care Management

HHH—Hospital and Health Administration

MAT—Mathematics

MED—Medicine

MET—Medical Technology

MIC—Microbiology

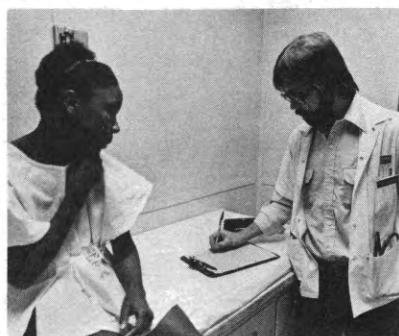
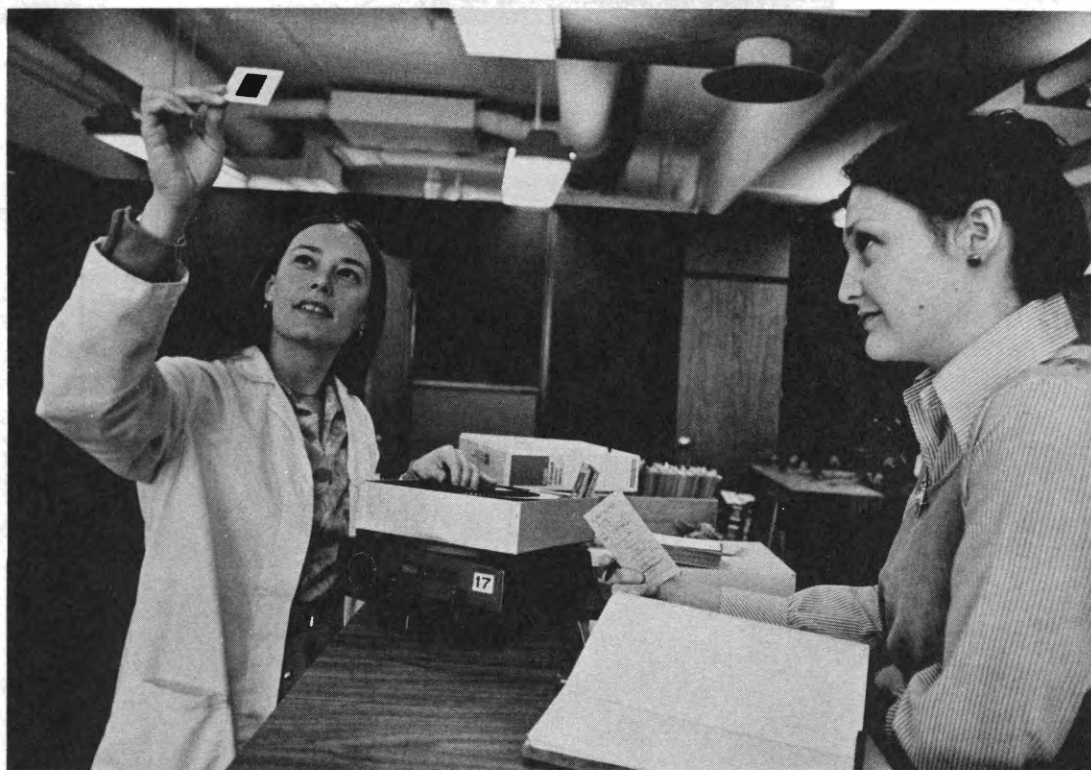
NUA—Nurse Anesthesia

NUR—Nursing

OCC—Occlusion

OCT—Occupational Therapy
ORP—Oral Pathology
ORS—Oral Surgery
ORT—Orthodontics
PAC—Patient Counseling
PAT—Pathology
PED—Pedodontics
PER—Periodontics
PHA—Pharmacy
PHC—Pharmaceutical Chemistry
PHT—Physical Therapy

PIO—Physiology
PMC—Pharmacology
PSY—Psychology
RED—Restorative Dentistry
REP—Removable Prosthodontics
RTE—Radiologic Technology
SOC—Sociology
SLW—Social Work
STA—Statistics
For other abbreviations, consult the Academic
Campus Bulletin



SCHOOL OF MEDICINE

ADMINISTRATIVE OFFICERS

Jesse L. Steinfeld, M.D.

Dean of Medicine

John R. Jones, M.D.

Associate Dean

Director of Clinical Services

Miles E. Hench, Ph.D.

Associate Dean, Admissions

W. Kenneth Blaylock, M.D.

Assistant Dean, Graduate Medical Education

L. Martin Harris

Assistant Dean, Student Affairs and Curriculum

David B. Walthall, M.D.

Assistant Dean, Continuing Education

Donald L. Cordes, Ph.D.

Assistant Professor, Medical Education

Douglas G. Palmore, M.Ed.

Assistant Professor, Medical Education

Thomas M. Rose, M.Bus.Ed.

Business Manager

HISTORY

The School of Medicine had its beginnings in the opening of the Medical College of Virginia on November 5, 1838 as the medical department of Hampden-Sydney College.

Full-time clinical faculty were first appointed in 1928, and substantial physical improvements occurred between 1936-1941 with completion of the 600 bed West Hospital, A. D. Williams Clinic, and Hunton Hall dormitory. Growth in faculty, students, and facilities resumed after World War II and has

continued to the development of today's academic medical center.

GENERAL INFORMATION

The mission of the School of Medicine is constant improvement of the quality of health care for citizens of the Commonwealth of Virginia, using innovative, scholarly activity to create new knowledge, to provide better systems of medical education, and to develop more effective health-care methods.

The School of Medicine shares the general objectives of the Medical College of Virginia of Virginia Commonwealth University:

1. To maintain an environment of educational excellence that will attract students and faculty interested in an institution maintaining the highest academic standards.
2. To promote an educational atmosphere that will develop in students: (a) desire and interest in lifelong learning, (b) intellectual curiosity, and (c) excellence in skills and knowledge required for the solution of problems of health and disease.
3. To provide standards of clinical practice and scientific investigation that will serve students as examples throughout their professional careers.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, which include undergraduate medical students and

graduate physician house officers, and continuing education directed toward the needs of practicing physicians. In the classroom, laboratory, clinic, and hospital, the faculty and students are brought together in teaching-learning experiences promoting scientific scholarship and personal growth in knowledge and professional skills.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of its skills in health-care leadership and patient care. Therefore, we share with teaching the interdependent and almost inseparable objectives of research and service.

FACULTY AND FACILITIES

The School of Medicine faculty consists of 123 basic scientists, 309 geographic full-time clinicians assisted by 404 interns and residents, and nine part-time and 554 volunteer clinical faculty. Programs of instruction and research are conducted on campus, at the McGuire Veterans Administration Hospital, and affiliated hospitals in an effort to expose the student to the variety of clinical disorders encountered in the eastern United States. Those affiliated community hospitals beyond Richmond include: Northampton-Accomack Hospital in Nassawadox, DePaul Hospital in Norfolk, Johnston Memorial Hospital in Abingdon, Petersburg General Hospital in Petersburg, and Riverside Hospital in Newport News.

ADMISSIONS

Selection priority is given to Virginia residents as defined by university regulations. Residents constitute approximately 85 percent or more of the class of 168 students. Members of minority groups underrepresented in medicine are encouraged to apply, particularly if they are Virginia residents. Non-resident applicants having averages of "B" or below, or Medical College Admission Tests (MCAT) scores of 550 or below are discouraged from applying. Preliminary screening on American Medical College Application Service (AMCAS) credentials is conducted. Candidates who appear willing and able to meet all requirements of the academic program are selected for the practice of medicine.

As a policy, the School of Medicine will not admit students from other health sciences schools at Virginia Commonwealth University until such students have completed the de-

gree program for which they are enrolled.

Questions concerning admission may be addressed to: School of Medicine, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 636, Richmond, Virginia 23298.

This institution participates in the American Medical College Application Service (AMCAS). Application forms are available only from the AMCAS office (Suite 103, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036). Application request forms are available from premedical advisors in colleges and universities and from admissions offices of schools of medicine.

Application forms generally are available after May 1 and may be filed for processing between July 1 and December 15 in the year preceding attendance in medical school.

All applications are reviewed and acknowledged within two working days of the receipt of the completed AMCAS application. Supplemental information, including evaluations, will be requested at that time for all applicants receiving further consideration. A non-refundable \$25 application fee is charged to cover the expense of all applications accepted for further consideration.

This institution is on the *Uniform Acceptance Plan*, for regular candidates. Acceptances will go out on December 15, January 15, and rolling admissions thereafter. The application deadline, December 15, refers only to the date by which the basic materials must reach AMCAS, with January 15 being the deadline for all supplementary materials to reach the School of Medicine.

Through AMCAS, MCV participates in the Early Decision Program. This provides the following advantages to the applicant:

1. It permits the applicant to file a single early application prior to August 15. This deadline refers not only to the date that the basic application materials must reach AMCAS, but also to the date that all supplementary materials and school evaluations must reach the MCV School of Medicine's Admissions Office.
2. All applicants applying on the *Early Decision Plan* will have a positive or negative decision from this school by October 1.
3. It allows the applicant who is not accepted by a given school as an early decision candidate to be reconsidered and possibly accepted by that school

as a regular candidate early in the admissions season.

4. Early decision applicants must take the MCAT prior to application and are required to have an interview on campus.

To participate in an Early Decision Program, the applicant must apply to only one U.S. medical school. If the applicant applies as an early decision candidate to any U.S. medical school, whether or not it is participating in AMCAS, he cannot apply to any other U.S. medical school until after the early decision has been made on his application. The applicant must attend that school if it offers him a place during the early decision segment of the admissions year.

If the applicant is not accepted by the medical school to which he applied as an early decision candidate, he may arrange to apply to additional schools as desired.

Requirements for Entrance

The Medical College Admissions Test (MCAT) is required as a part of the credentials. It is desirable that the test be taken no more than two years prior to the time of application nor later than the fall of the year of application. This test is sponsored by the American College Testing Program, P.O. Box 414, Iowa City, Iowa 52240, and is administered in colleges and universities throughout the country. Information about the MCAT is available through premedical advisors in colleges and universities or directly from the American College Testing Program.

Applicants occasionally are admitted on the basis of 90 semester hours of outstanding achievement, but preference is given to students who will, upon enrollment, hold bachelor's degrees from accredited colleges. Major subjects should be selected in accordance with individual aptitudes and interests.

To permit individual intellectual interests to be pursued, statements of prerequisites have been reduced to a minimum of 90 semester hours (or the equivalent) in an accredited college or university. This program must include a minimum of:

1. English and college mathematics—two semesters
2. A course in basic biological science (eight semester hours), including laboratory experience. This may be satisfied by general biology, general zoology, or botany. No more than half may be botany.

3. A course in general or introductory chemistry (eight semester hours), including laboratory. An appropriate portion of this requirement may be met by courses in analytical chemistry or physical chemistry.
4. One full course in organic chemistry (six semester hours), including laboratory. This program should include studies of aliphatic and aromatic compounds and be acceptable for continued studies in a chemistry major.
5. A course in general or introductory physics including laboratory experience (eight semester hours).

The prospective medical student should not take courses that will later be offered in medical school in order to lighten his medical school load. Rather, he is encouraged to pursue his own intellectual interests in college to obtain a maximum of breadth and variety in his education. Courses in medically related science areas will not relieve the student of responsibility in the medical curriculum.

(1) Cell Biology (molecular biology, cell physiology). Courses in these areas incorporate appropriate content from chemistry and physics in definition of biological phenomena at sub-cellular and molecular levels and form an excellent base for further studies in medicine.

(2) Genetics. The significance of this area of study is constantly growing as our knowledge expands and forms a functional portion of the evaluation process in medicine.

(3) Embryology. Courses in this area of biology present aspects of anatomic structure and developmental characteristics at microscopic level. They, therefore, serve as useful additions to the anatomic vocabulary and histologic knowledge of the medical student.

(4) Advanced Mathematics. The fundamental nature of mathematics as a tool for acquisition of knowledge makes it significant in any advanced educational process. Calculus should be included for all students aspiring to medical research.

(5) Psychology and Behavioral Science. Courses in this area of study serve to increase the understanding of individual and group behavior.

Selection Factors

Attributes of character, personality, and demonstrated academic skill and ability are significant in the selection process. Recommendations, interviews, MCAT scores, and a

review of academic transcripts are used to provide information for the comparative selection process.

Interviews with members of the Admissions Committee are a definite part of the admissions procedure. These are arranged as a stage in the evaluation process at the request of the committee. The interview day is set up as an opportunity for the applicant to become acquainted with the institution and the opportunities it offers while he is supplying information for the admissions process. It is preferred that interviews take place on campus with members of the Admissions Committee. When this is difficult or impossible to accomplish, regional interviews may be arranged.

As more applicants are interviewed than can be accepted, appearance for interview is not an indication of acceptance.

Offers are made as detailed above and class selections generally are completed by April of the year of attendance. The alternate list is constituted from selected and notified candidates after the class has been filled. It is from this group that replacements are drawn for any vacancies that occur in the selected class.

Since selections are made in advance of matriculation, all acceptances are made on the condition of satisfactory completion of courses planned or in progress, and maintenance of acceptable standards of deportment.

Students offered acceptance into a class are expected to respond within two weeks of that offer. Enrollment of accepted candidates is considered complete only after payment of the \$100 matriculation fee, of which \$90 represents a deposit on tuition. The \$90 deposit on tuition is not refundable after June 1.

By the act of matriculating in the School of Medicine, the candidate accepts the responsibilities of this opportunity and agrees that during the time he is registered as a student he will follow the rules and regulations established by the governing body of the school and of the university.

TRANSFER IN ADVANCED STANDING

Application for Transfer in Advanced Standing will not be encouraged during our forthcoming academic year because clinical assignments are sufficient only for original acceptees whose numbers were recently enlarged to the capacity of our classrooms and laboratories. Only if a student successful in another medical school has an extraordinarily compelling reason for moving to Richmond, can the application for transfer be entertained.

CURRICULUM

The program for the M.D. degree is divided into four phases, each of a year's duration. Medicine I, occupying the first year (August to May), emphasizes normal human structure, function, growth, and development. Medicine II, occupying the second year (August to June), stresses the abnormal. Medicine III occupies the third year (July to July) and consists of clinical education and training. The fourth year (Medicine IV), lasting from July to May, consists one-half of required clinical education and training and one-half of electives at MCV/VCU and at approved medical schools elsewhere in the USA and abroad. Elective opportunities are offered also in M-I and M-II.

REGISTRATION IN COURSES OFFERED BY THE SCHOOL OF MEDICINE IS RESTRICTED TO STUDENTS ENROLLED IN THE SCHOOL OF MEDICINE AT THE MEDICAL COLLEGE OF VIRGINIA.

Medicine I and II

The subject matter of Medicine I and Medicine II is divided into body organ systems to permit integration of the basic science disciplines (anatomy, physiology, bio-chemistry, microbiology, pharmacology, pathology, biometry, and biophysics) with one another and with the clinical aspects. Behavioral science, preventive medicine, public health, cardinal manifestations of disease, and physical diagnosis are also taught in M-I and M-II.

In M-I the organ system subject matters are:

Course	Length
Cell Biology	6 Weeks
Musculo-Skeletal	9 Weeks
Gastrointestinal	6 Weeks
Cardiovascular-Respiratory	4 Weeks
Renal	2 Weeks
Reticuloendothelial	2 Weeks
Neurosciences	6 Weeks
Endocrine	3 Weeks
Reproduction	3 Weeks

Each subject matter in M-I and M-II is designed and implemented by a faculty committee, and each phase of the curriculum is supervised by a faculty coordinator. In M-III a committee under a coordinator supervises the clinical experiences, and in M-IV there is an electives committee, whose chairman is the M-IV coordinator. Students serve on all committees.

In M-II the organ system subject matters are:

Course	Length
Infection and Immunity	6 Weeks
Reticuloendothelial	3 Weeks
Musculo-Skeletal and Clinical Pharmacology	4 Weeks
Cardiovascular	4 Weeks
Central Nervous System	Weeks
Respiratory	3 Weeks
Endocrine	3 Weeks
Reproduction	3 Weeks
Gastrointestinal	4 Weeks
Renal	3 Weeks

Medicine III

Medicine III encompasses the third academic year running from the middle of July to the middle of the following July with appropriate short vacations. The class is divided into 12 sections, each of which spends three months on internal medicine, three months on surgery and other surgical specialties, two months on pediatrics, six weeks on psychiatry, six weeks on obstetrics and gynecology, and four weeks in a community hospital.

Medicine IV

The School of Medicine, in an effort to serve best the needs and goals of the individual student, offers M-IV students the option of choosing electives during one-half of their senior year. The elective curriculum has been arranged primarily to allow those students who have definite goals to pursue them logically without adherence to a required curriculum. At the same time, it allows those who have not yet defined their goals an adequate assortment of electives with which to explore career options. Where standard elective choices seem too limiting, students are encouraged to approach individual faculty members relative to the development of unique courses that more closely approach individual needs.

The year is divided into 10 four-week elective periods, five of which are required. All elective programs are subject to review by the Electives Committee.

A new electives catalog is published each year which contains the elective courses offered by the various departments and divisions and the "ground rules" for the senior elective program.

Internship Program—First-Year Post M.D. Clinical Training (Medicine V)

Approved first year post M.D. categorical training (with some flexibility) in medicine, surgery, obstetrics-gynecology, psychiatry, and anesthesiology and categorical internships in family practice, medicine, surgery, pediatrics, pathology, and radiology are offered. All facilities available to students are equally available to interns. Regularly scheduled clinical rounds, clinical pathologic conferences, inpatient and outpatient experience, and systematic rotation through services are included in the various internship programs.

For further information and a new program booklet, write Director of Graduate Medical Education, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 257, Richmond, Virginia 23298.

RESIDENCY PROGRAMS

A period of clinical experience in the specialty elected is a requirement of certification by the American specialty boards. To assist the physician in meeting such requirements, approved residency training programs are offered. The MCV Hospitals and clinics and its cooperative institutions offer a wealth of clinical material as well as an able and dedicated faculty in graduate medical education. Post-graduate medical programs are offered in: anesthesiology, dermatology, family practice, internal medicine, neurology, neurosurgery, obstetrics and gynecology, ophthalmology, otolaryngology and rhinology, pathology, forensic pathology, pediatrics, pediatric allergy and immunology, pediatric cardiology, pediatric hematology and oncology, pediatric neurology, physical medicine and rehabilitation, public health and preventive medicine, psychiatry, radiology, diagnostic radiology, therapeutic radiology, surgery, oral surgery, orthopedic surgery, plastic surgery, urology, and thoracic surgery.

For further information contact the Director of Graduate Medical Education, School of Medicine, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 257, Richmond, Virginia 23298.

ANNUAL LECTURESHIPS

Continuing Education—Medicine X

Annual lectureships have been established in honor of individuals who have played vital roles in the development of MCV/VCU and

serve to bring outstanding speakers from throughout the world to the campus.

The Board of Visitors established the Stuart McGuire Lectureship on May 27, 1929 in honor of Dr. Stuart McGuire and in recognition of his long years of service to the college. Dr. McGuire served as president of the University College of Medicine from 1905 until its consolidation with MCV in 1913, as dean of MCV from 1913 to 1919, as president from 1919 to 1925, and as chairman of the Board of Visitors from 1936 until his death in 1948.

The Lewis T. Stoneburner, III, Lectureship in Internal Medicine was established by Dr. Stoneburner's friends and members of the 45th General Hospital staff in World War II as a memorial to Captain Stoneburner, an honor graduate of the School of Medicine, 1937, who was lost over the Mediterranean Sea in 1943.

The Department of Pediatrics sponsors annually a one-day medical education program and lectureship in honor of the late Dr. Lee E. Sutton, Jr., who was chairman of the department from 1938 to 1958 and dean of the medical school from 1929 to 1942.

The annual Student Honors Day, sponsored by the Student American Medical Association and Alpha Omega Alpha, has been designated Kinloch Nelson Medical Student Honors Day as an expression of appreciation for the leadership Dr. Nelson provided during his tenure as dean of the School of Medicine from 1963 to 1971.

The Sanger Lecture was established and endowed by the late Dr. Harvey B. Haag, professor and chairman of the Department of Pharmacology and dean of the School of Medicine from 1947 to 1951, as a tribute to Dr. William T. Sanger for his dedication and service to the institution. Dr. Sanger served as president of MCV from 1925 until 1956, chancellor from 1956 to 1959, and chancellor emeritus from 1959 until his death in 1975. The lectureship annually offers topics of current interest in the area of science and religion to MCV/VCU and the Richmond community.

In 1973, former residents in obstetrics and gynecology from the Medical College of Virginia, through their organization, the H. Hudnall Ware, Jr. Society, established a visiting professorship in honor of H. Hudnall Ware, Jr., M. D., who was professor of obstetrics and gynecology from 1942 to 1967. The first visiting professor, Dr. Richard Mattingly, was on campus in December 1973, and the second visiting professor, Dr. Robert A. Munsick,

came in December 1974. The visiting professorship is combined with a two day postgraduate continuing education program which provides information of recent advances in obstetrics and gynecology

COMBINED M.D. AND M.S. OR PH.D. PROGRAMS

The integrated medical curriculum, with free time for elective courses and research, provides an excellent opportunity for interested medical students to enter a combined M.D./M.S. or Ph.D. program.

For details, see the section on graduate studies, page 137.

GRADING AND PROMOTIONS

Each student's progress toward his objectives is evaluated in the laboratory, on clinical services, by examination upon each subject matter, and by comprehensive or National Board examinations at appropriate times. Grades are assigned on the honors, pass, or fail basis. Borderline students are counseled frequently.

At the close of each academic year the Promotions Committee, composed of chairmen of departments, decides which students have achieved the objectives of the year and are qualified for either promotion or graduation. The Promotions Committee is charged to give careful individual attention to all aspects of student achievement, effectiveness, behavior, and attitude. The committee is charged not to promote any student who has failed to meet the requirements of the preceding year, who is unprepared for the succeeding year, or who appears unfit for the practice of medicine. When the committee determines by majority vote that a student will not be promoted, the dean promptly notifies that student that he is dismissed from his class and from medical school. A student dismissed by the Promotions Committee may apply to the Admissions Committee for the privilege of repeating the year in which he failed.

WITHDRAWAL

A student may not leave school prior to completion of an academic year unless granted leave of absence by the dean for temporary disability. A student who leaves without such permission or who fails to return by the end of his granted term of leave, is considered dismissed from his class and may return only by applying for possible readmission.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine will be conferred by Virginia Commonwealth University upon candidates who, in the opinion of the medical faculty, have:

1. Attained the school's educational objectives as evidenced by satisfactory completion of prescribed courses and examinations, by proven clinical skills, responsibilities, and ethical standards;
2. Attended the School of Medicine, Medical College of Virginia, for a minimum of two years; and
3. Discharged all financial obligations to the school.

If, in the judgment of the faculty, he has met these requirements, plus those special requirements stated above, a student may be graduated at the end of the third academic year.

It is the policy of the School of Medicine that candidates must be present at commencement exercises unless excused by the dean.

STUDENT PARTICIPATION

The dean and faculty solicit the advice of students in conducting the affairs of the medical school. Student officers elected by their classes meet for dinner quarterly with deans and curriculum coordinators. At these meetings each phase of the curriculum and any other matters of concern to students are discussed in detail. Each class also elects representatives to the faculty committees which design its curriculum. Students are selected by the dean and the faculty to serve on the Admissions Committee, on faculty tenure committees, and on committees to recommend appointment of deans. A continuing effort is made to improve methods for student evaluation of teaching technique. All students are welcome to visit the deans, teachers, and faculty advisors at any time to volunteer opinions or seek explanations of procedures employed by the school.

STUDENT FELLOWSHIPS

Opportunities are available for study and investigation under the tutelage of faculty members in their laboratories during the summer vacation and as an extracurricular activity during the school year.

These are supported by the A. D. Williams fellowship endowment (selections are made by the A. D. Williams Committee on the recommendation of the Institutional Research

Advisory Committee) and by project grant funds (selections are made by the principal investigators).

The Robert C. Bryan Summer Fellowship in Pathology has been given by Mr. Jonathan Bryan in memory of his father. The recipient is chosen by the Department of Pathology.

HONORS AND PRIZES

Student research and honors day is held in May. Begun by the Student American Medical Association, it is now a joint effort of that organization, the Alpha Omega Alpha honorary scholarship fraternity, and the medical school. Honors and prizes in the medical school are:

Alpha Omega Alpha. The Brown-Sequard Chapter, established at MCV in 1940, elects to membership each year senior and junior students who have demonstrated outstanding academic achievement.

Sigma Xi. Seniors of high scholastic achievement, who show promise of success in research, may be elected to associate membership in the MCV chapter of this national honorary scientific society.

Sigma Zeta. Outstanding members of the junior and senior classes of the Schools of Medicine, Dentistry, Pharmacy, and Nursing are elected to this honorary scientific society.

L. Beverley Chaney Scholarship. For responsible leadership during the first three years of medical school, a senior scholarship of \$1,500 from the Joseph Collins Foundation in memory of its trustee, Dr. Chaney, who graduated from the School of Medicine in 1918.

The Upjohn Prize. A plaque and \$150 awarded by the Upjohn Company to the senior student chosen by his classmates as the most outstanding in scholarship and leadership.

The Roche Prize. An Omega watch to the student achieving the highest score on Part I of National Board Examinations.

William Branch Porter Stethoscope. A silver replica of the stethoscope given by Sir William Osler to Dr. Porter, professor of medicine from 1928 to 1956. Awarded to a senior student for outstanding achievement in internal medicine.

Isaac A. Bigger Medal. A medal awarded annually to a surgical resident for integrity, leadership, teaching, and clinical ability, in memory of Dr. Bigger, professor of surgery from 1930 to 1955.

Lee E. Sutton, Jr., Prize. Awarded to a senior student for excellence in pediatrics, in memory of Dr. Sutton, professor of pediatrics from 1938 to 1958, and dean from 1929 to 1942.

Robert C. Bryan Prize. For excellence in sophomore pathology, an annual award of \$50 in memory of Dr. Bryan, professor of urology from 1917 to 1934.

Aubrey H. Straus Prize. For excellence in sophomore microbiology, an annual award of \$75 in honor of Dr. Straus, assistant professor of microbiology from 1909 to 1924.

Hjalmar L. Osterud Prize. For excellence in freshman anatomy, \$75 awarded annually to a medical or dental student in memory of Dr. Osterud, professor of anatomy from 1922 to 1953.

H. Hudnall Ware Award. A plaque and \$100 awarded by Alpha Omega Alpha to the student who is first, academically, in his class at the time of graduation (usually awarded to a third-year student).

Departments and Divisions of Instruction

DEPARTMENT OF ANESTHESIOLOGY

Professors: Boyan (Chairman); Jones, J.R.; Rafii, A.
Clinical Professor: Pembleton
Associate Professor: Muren
Associate Clinical Professors: Harris, C.; McDermott
Assistant Professors: Aghdami; Chu, S.; Chu, Y.; Debrand; Salomonsky; Rah
Assistant Clinical Professors: Jarrett; Kallar
Clinical Instructor: Hranowsky

DEPARTMENT OF DERMATOLOGY

Professors: Blaylock (Chairman); Rothberg
Clinical Professors: Manson; Murrell; Pepple
Associate Professor: Jordan, W. P.
Associate Clinical Professors: McMullan; Scoggins; Trice
Assistant Professor: Abell
Assistant Clinical Professors: Black; Booth; Caravati; Reams
Clinical Instructors: Hudgins; Kelly
Lecturers: Murray; Pariser

DEPARTMENT OF FAMILY PRACTICE

Professors: Mayo (Chairman); Harris, J.; Wood, M.
Associate Professors: Marsland; Walthall
Associate Clinical Professors: Alexander; Gilliam; Harris, A.; Harris, J.; Mackintosh; Mitchell; Quinnell; Smith, R.; Stallings; Temple; White

Assistant Professor: Anderson

Assistant Clinical Professors: Burt; Buston; Charlton; Delsordo; Devlin; Gill; Kelsey; Kintigh; Kraus; Layman; Norfleet; Oglesby; Skaggs; Weger; Wise; Wynne; Zakaib

DEPARTMENT OF LEGAL MEDICINE

Professor: Wiecking (Chairman)
Associate Professors: Blanke; Jordan, T. D.
Assistant Professors: Bath; Fierro
Lecturers: Anderson; Russell; Scott; Thornhill

DEPARTMENT OF MEDICINE

Professors: Fallon (Chairman); Blackard; Duma; Falls; Farrar; Goldman, I. D.; Irby, W. R.; James; Kelly; Kirkland; Kontos; Lurie; Makhlof; Mauck, H. P.; Moore, E. W.; Muren; Nelson; Oken; Patterson; Porter; Rigelson; Richardson; Ruddy; Scott, R. B.; Sharpe; Steinfeld; Stacy; Swell; Switz; Toone; Tucker, St. G.; Vlahcevic; Waller; Wampler; Wasserman; Watlington; Weglicki
Clinical Professors: Blanton; Estep; Freund; Klein
Professors Emeriti: Caravati; Davis, T. D.; Nelson, K.
Associate Professors: Brummer; Cooke; Dabney; Ewart; Gregory; Haden; Kemp; Mellette; Mullinax; O'Donohue; Owen; Pears; Proctor; Probert; Raper; Roberts; Shadomy, H.; Shadomy, S.; Wingo; Zfass
Associate Clinical Professors: Alexander; Bernart; Blount; Burke; Burton; Clark; Cummins; Greenberg; Kay; Kuperminc, M.; McCue, H.; McGehee; Owens; Sutphin
Associate Clinical Professors Emeriti: Camp; Lynch
Assistant Professors: Archer; Arthur; Barrett; Bear, E. S.; Bell; Espinel; Evans; Fairly; Flaherty; Fratklin; Gear; Guzelian; Hassan; Hastillo; Hood; Hornbuckle; Lamb; Markowitz, S.; Mayhall; Moore, R. P.; Morley; Qureshi; Robinson; Schwartz, C.; Smith, W. K.; Steinke; Whaley; Yoe
Assistant Clinical Professors: Bates; Baylor; Becker, E.; Bedinger; Black; Catlett; Chremos; Grinnan; Harris; Higgins, W.; Koller; Levy; MacMillan; Martin; Mathews; Miller; Morey; Reed; Speckhart; Sporn; Stevens; Thornton; Vaughan; Weisiger; Williams, R. O.
Assistant Clinical Professors Emeritus: Thomas
Clinical Associates: Bailey; Brown; Budd; Buis; Bullock; Dingleline; Hecht; Hutcheson, J. M.; Irby, E. C.; Markham; McEntee; McKeown; Mitchell; Pollack; Regan; Rose; Tabor; Wingfield
Instructors: Kisloff; Mohanty; Tortorella; Winks
Clinical Instructors: Ansell; Ashworth; Davis, T. D., Jr.; Deep, W.; Elliott; Frederick; Gayle; Glazier; Goldman, S. A.; Hall; Key; Kroll; Newman; Nottingham; Parker; Pollock; Pritchard; Smith, R.; Tucker, S. C.; Tucker, W. T.; Wickham; Wootton; Wynne; Zacharias

Division of Cardiopulmonary Laboratories and Research

Professors: Patterson (Chairman); Kontos; Mauck
Associate Professors: O'Donohue; Pears
Assistant Professor: Bell
Clinical Instructor: Parker

Division of Cardiovascular Disease

Professors: Richardson (Chairman); Porter
Associate Professors: Kemp; Probert; Raper
Associate Clinical Professors: Blount; Greenberg;
McCue, H.
Assistant Professors: Gear; Hassan; Hastillo; Hess;
Robinson; Steinke
Assistant Clinical Professor: Bates
Clinical Instructors: Ashworth; Gayle; Nottingham;
Smith, R. H.; Wootton

Division of Clinical Pharmacology

Professor: Wasserman (Chairman)
Clinical Professor: Freund
Associate Professor: Proctor
Associate Clinical Professor: Clark, F. A., Jr.
Assistant Professor: Evans
Clinical Associates: Pollack; Tabor; Wingfield
Clinical Instructor: Elliott

Division of Endocrinology and Metabolism

Professors: Tucker, St. G.; (Chairman); Blackard;
Kirkland; Sharpe; Watlington
Clinical Professor: Estep
Assistant Professor: Fratkan
Assistant Clinical Professor: Chremos
Clinical Instructor: Newman
Clinical Associates: Bailey; Dingleline; Rose
Associate Clinical Professor (Podiatry): Cummins
Assistant Clinical Professor (Podiatry): Levy

Division of Gastroenterology

Professors: Farrar (Chairman); Makhoul; Moore;
Swell; Vlahcevic
Associate Professors: Gregory; Switz; Zfass
Associate Professors: Guzelian; Schwartz; Whaley
Assistant Clinical Professors: Morey; Weisiger
Clinical Associates: Mitchell; Regan
Instructor: Kisloff
Clinical Instructors: Davis; Frederick; Hall

Division of Hematology

Professors: James (Chairman); Scott, R. B.
Associate Professor: Dabney
Assistant Professors: Flaherty; Qureshi
Assistant Clinical Professors: Martin; Stevens
Clinical Instructors: Ansell; Deep, W.

Division of Immunology and Connective Tissue Disease

Professors: Ruddy (Chairman); Irby, W. R.; Kelly;
Toone; Waller
Associate Professors: Cooke; Mullinax; Owen
Assistant Clinical Professor: Koller
Instructor: Whaley

Division of Infectious Diseases

Professor: Duma (Chairman)
Associate Professors: Brummer; Shadomy, H.;
Shadomy, S.
Associate Clinical Professors: McGehee; Owens;
Sutphin
Assistant Professors: Archer; Markowitz, S.; Mayhall
Assistant Clinical Professors: Catlett; Mathews
Clinical Instructor: Becker

Division of Medical Oncology

Professor: Regelson (Chairman)
Associate Professors: Mellette; Roberts; Wampler
Associate Clinical Professor: Kuperminc, M.
Assistant Professors: Hornbuckle; Smith, W. K.
Instructor: Winks

Division of Pulmonary Disease

Professor: Muren
Clinical Professor: Ray
Assistant Professor: Bell
Clinical Associate: Buis
Clinical Instructors: Glazier; Parker, Cl. L.

Division of Renal Disease

Professors: Oken (Chairman); Falls
Associate Professor: Stacy
Assistant Professor: Espinel
Instructor: Tortorella
Clinical Instructor: Kroll

DEPARTMENT OF NEUROLOGY

Professors: Suter (Chairman); Harbison
Clinical Professors: Rennie; Tucker
Visiting Professor: Papadopoulos
Associate Professor: David
Associate Clinical Professor: Richards
Assistant Professors: Calabrese; Grindal; Howell;
Isaacs; Isrow; McGee; Selhorst; Taylor
Assistant Clinical Professors: Harrelson;
Harris, W. O.;
Clinical Instructor: Atkinson

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

Professors: Dunn (Chairman); Board; Schelin
Professor Emeritus: Hoge

Clinical Professor: Winn
 Associate Professors: Goplerud; Hurt; Kumarasamy; Petres
 Associate Clinical Professors: Claiborne; Jones; Parker; Vitsky
 Assistant Professors: Bhatnagar; Borchart; Fantl; Gabel; Matthews
 Assistant Clinical Professors: Howren; Michaux; Moore; Robins; Rucker; Williams, L. H.
 Assistant Clinical Professor Emeritus: Shamburger
 Clinical Instructors: Battista; Crooks; Deep, A.; Fitzhugh, W. G.; Forrest; Hamilton; Minor; Oppenheimer; Partridge; Royal; Ware, H. H., III

DEPARTMENT OF OPHTHALMOLOGY

Professor: Macdonald (Chairman); Geeraets, W. J.;
 Clinical Professors: Guerry; Wiesinger
 Associate Professors: Harbison; Nooney
 Associate Clinical Professors: Bryce; King; Madge; Mayer; McNeer, K.; Romaine; Sheppard; Smith M.; Williams, R. K.
 Associate Clinical Professor Emeritus: Thomason
 Assistant Professors: Brown, J.; Ferguson; Geeraets, R.; Selhorst
 Assistant Clinical Professors: Blair; Bunting; Caldwell; Davis, F.; Gazala; Martin; Morgan; Rusher; Stratford; Waddell; Wyatt
 Instructor: Porter
 Clinical Instructors: Heyner; Jacey; MacMillan; McNeer, P.; Smith, L. T.; Svoboda

DEPARTMENT OF OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY

Professors: Pastore (Chairman); Cutler
 Clinical Professors: Hayden; Smith; Williams, G.
 Clinical Professor Emeritus: Wallerstein
 Associate Professors: Flowers; Frable, M. A.; Lenhardt
 Assistant Clinical Professors: Atiyeh; Gill; Hulcher; Hunt; LaPrade; Middleton; Montague
 Clinical Associate: Creech
 Clinical Instructors: Archer; Clarke; Dodd; Shaia
 Lecturer: Linde

DEPARTMENT OF PATHOLOGY

Professors: Allison; Bakerman; Blanke; Cunningham; Dalton; Duma; Dutz; Elzay; Fisher; Frable, W.; Gander; Hench; Hossaini; James; Johnston; Kay; Lurie; Madge; Rosenblum; Salley; Santos; Scott; Shiel; Still; Vennart (Acting Chairman); Young; Wiecking
 Clinical Professors: Borland; Carroll; Faulconer; Kohout; Russi; Thornton
 Associate Professors: Draper; Escobar; Gerszten; Hadfield; Hood; Joshi; Lim; Martinez; Moncure; Nakoneczna; Schatzki;

Associate Clinical Professors: Beck; Briere; Clark; Goodwin; Griffin; Kramer; McGehee; McMullan; Pearce

Assistant Professors: Cross; Lynch; Silverman; Thomas, G.

Assistant Clinical Professors: Martin, C.; Pinto; Smith; Snell; Weeks

Instructor: Thomas, C. E.

Clinical Instructors: Gutierrez; Jain; Kipreos; Sylvest; White

Division of Academic Pathology

Professors: Cunningham (Chairman); Gander; Lurie; Madge; Shiel; Still

Clinical Professors: Borland; Carroll; Faulconer; Russi; Thornton

Associate Professors: Gerszten; Hard; Joshi; Moncure; Nakoneczna

Associate Clinical Professors: Beck; Briere; Clark; Goodwin; Griffin; Kramer; McGehee; McMullen

Assistant Professor: Hard

Assistant Clinical Professors: Hoke; Martin; Pinto; Smith; Snell

Clinical Instructor: White

Division of Clinical Pathology

Professors: Vennart (Chairman); Allison; Bakerman; Blanke; Dalton; Fisher; Hench; Hossaini; Johnston; Santos; Young
 Associate Professors: Draper; Escobar; Lim
 Assistant Professors: Lynch; Thomas, G.
 Instructor: Thomas, C. W.

Division of Neuropathology

Professor: Rosenblum (Chairman)
 Associate Professors: Hadfield; Martinez

Division of Surgical Pathology

Professors: Kay (Chairman); Dutz; Frable
 Associate Professor: Schatzki
 Assistant Professor: Silverman

DEPARTMENT OF PEDIATRICS

Professors: Maurer (Chairman); Kendig; Mamunes; Mauck; McCue, C.; Ownby; Young
 Clinical Professor: Bundy
 Emeritus Professor: Stone, J.
 Associate Professors: Bright; David; Draper; Garrettson; Massie; McWilliams; Robertson; Spencer; Stewart; Tingelstad
 Associate Clinical Professor: Arnold
 Assistant Professors: Bruch; Burde; Campbell; Eanes; Kirkpatrick; Myer; Rodriguez
 Assistant Clinical Professors: Andrews; Burch; Chalkley; Edmonds; Fisher; Hoffman, R.; Hudgens; Hunt; Kannan; King, N.; Moore; Overton; Pinkerton; Prince; Weinstein

Clinical Associates: Curry; Davis, E.; Dwyer; Fidler; Johnston; Leverty; Lindemann; Thompson; Wilkerson

Clinical Instructors: Abernathy; Alpern; Austin; Baran; Barringer; Bones; Jaffe; Jamison; Jones, J.; Kern; King, A.; Kirchmier; Kuperminc, D.; Lee; Lum; Rahal; Rivadeneira; Solomon; Wells; Wiley

Division of Pediatric Cardiology

Professors: McCue, C. (Chairman); Mauck
Associate Professor: Tingelstad
Assistant Professor: Robertson

DEPARTMENT OF PREVENTIVE MEDICINE

Professors: Spencer (Chairman); Jessee
Clinical Professor: Nemuth
Associate Professor: Peeples
Assistant Professor: Brummer;
Clinical Instructors: Bookman; Price; Wood
Lecturers: Graham; Harton; Hays; Leavell; Shanholtz

DEPARTMENT OF PSYCHIATRY

Professors: Arginteanu; King, L. J.; Silberman (Acting Chairman)
Clinical Professors: Allerton; Bowen; Foster; Kriegman
Emeritus Professors: Drewry; Neale
Associate Professors: Batchelder; Butcher; Draper, W.; Harris; Hauser; Mullaney; Schumann; Scott; Zalis
Associate Clinical Professors: Brooks; Christian; Friedenberg; Funkhouser; Gayle; Gomez; Longan; McDonough; Meiller; Merker; Schmidt; Williams
Associate Professor Emeritus: Riese
Associate Clinical Professor Emeritus: Shield
Assistant Professors: Edwards; Entin; Finch; Griffin; Gullick; Hart; Holland; Hulbert; Keiter; Kemp; Parham; Pierson; Reid; Resnick; Shenoy; Silverman, J.; Smith; Tomsich; Wouters
Assistant Clinical Professors: Armstrong; Barnes; Blankinship; Centor; Cooke; Fisher; Flesicher; Garcia; Haun; Kapsalas; Kriegman, L.; Lindemann; Makarowsky; Masri; Schulman; Shield, J. A., Jr.; Sormus; Tingley; Vitols, M.
Clinical Associates: Coates; Saunders
Instructors: Peed; Nance; Ramsey; Reid; Smith, M.; Xides
Clinical Instructors: Crigler; Howerton; Hyde; Master; Murack; Nelson, B.; Nunez; Parker, J. S.; Stiles; Vitols, E.; Zaller

Division of Child Psychiatry

Associate Professors: Batchelder; Draper, W. (Chairman); Hauser

Associate Clinical Professors: Meiller;
Assistant Professors: Edwards; Finch; Griffin; Kemp; Parham; Reid; Tomsich
Assistant Clinical Professor: Lindemann
Instructor: Nance

Division of Clinical Psychology

Professor: Arginteanu (Chairman)
Associate Professor: Scott
Assistant Professors: Entin; Gullick; Resnick; Fleischer
Assistant Clinical Professors: Centor; Garcia; Schulman; Tingley
Clinical Associate: Kriegman, L.
Instructor: Peed

DEPARTMENT OF RADIOLOGY

Professors: Hutton; King, E. R.; Merz; Neal, M. P.; Sharpe; Stickley
Clinical Professors: Armstrong; Cimmino
Associate Professors: Beachley (Acting Chairman); Belgrad; Eisenberg; Floyd; Fratkin; Ghahremani; Glenn; Goodman; Haden; Montour; Pevsner; Strash; Walton; Yaghmai
Associate Clinical Professors: Fitch; Howell; Lundeen; Myles; Rogers; Talley; Vinik; Walker
Assistant Professors: Bosch; Burke, A. W.; Faunce; Fields; Hirsch; Howells; Kirschner; Kodroff; Nooney; Rao; Turner; Ulbrich; Wilson; Woodlief
Assistant Clinical Professors: Attix; Bredrup; Cabrera; Calkins; Galston; King, D.; Roberts; Savage; Southworth; Theus
Instructors: Hietala; Rooholamini;
Clinical Instructors: Spencer; Winkler

Division of Diagnostic Radiology

Professors: Hutton; Neal, M. P.
Clinical Professors: Cimmino
Associate Professors: Beachley; Eisenberg; Floyd; Ghahremani; Glenn; Goodman; Haden; Pevsner; Yaghmai
Associate Clinical Professors: Howell; Lundeen; Talley; Walker
Assistant Professors: Bosch; Fields
Assistant Clinical Professors: Bredrup; Calkins; Galston; Hager; King, D.; Roberts; Savage; Southworth
Instructors: Hietala; Rooholamini; Turner
Clinical Instructors: Spencer; Winkler

Division of Nuclear Medicine

Professor: Sharpe (Chairman)
Associate Professors: Fratkin; Haden
Assistant Professor: Hirsch

Division of Radiation Physics

Professor: Stickley

Associate Professors: Walton (Chairman); Strash

Assistant Professors: Howells; Nooney;

Division of Radiation Therapy and Oncology

Professor: King, E. R. (Chairman)

Associate Professor: Belgrad

Assistant Professor: Burke

Division of Radiobiology

Professor: Merz (Chairman)

Associate Professor: Montour

Assistant Professor: Wilson

DEPARTMENT OF REHABILITATION MEDICINE

Professor: Griffith (Chairman)

Clinical Professor: Park

Clinical Professor Emeritus: Dawson

Associate Professors: Cohen; LaFratta; Zalis, A.

Assistant Professor: Lamb

Instructor: Bayer; Kallar, B. S.; Rosenthal, M.

DEPARTMENT OF SURGERY

Professors: Greenfield (Chairman); Banks; Bear;

Becker; Boshier; Brooks; Cohen; Harbison;

Haynes; Koontz; Lee, H. M.; Lower; Miller;

Salzberg; Smith, J. V.; Terz; Wolf; Young, H.

Clinical Professors: Carpenter; Clary; Coleman, C.

L.; Coxe; Deyerle; Gwathmey; Hill, W. R.;

Hoover; Johns, T.; Markowitz; Smith, L.; Troland;

Ulmer; Williams, C.; Zimberg

Clinical Professor Emeritus: Tucker

Associate Professors: Braf; Kaplan; McGuire;

Newsome; Theogaraj; Thomas, F.

Associate Clinical Professors: Bryson; Butterworth,

R. D.; Carter; Conquest; Dodson; A. I.; Harrison;

Hill, J. E.; Johns, W.; McDowell; Mullen; Natvig;

Oates; Pancoast; Reid, Royster; Terrell; Ware, J.

L.; Williams, A.

Associate Clinical Professor Emeritus: Warthen

Assistant Professors: Brown; Bryant; Cardea;

Diegelmann; Ehrlich; Gayle; Hackler; Halloran;

Hutcher; Levinson; Mendez-Picon; Merritt;

Sakalas; Szentpetery; Texter; Thomas, J.; Wilson, J.

Assistant Clinical Professors: Atwill; Beazley; Blades;

Butterworth, J. F.; Butterworth, T. R.; Cherry;

Coleman, C. C.; Crouch; Dalton; Darden; Davis,

R. K.; Drummond; Eagles; Hakala; Jackson; Kell;

Kendrick; Knaysi; Mauck; May; Nachman;

Nevins; Packer; Pole; Poulos; Rawls; Riley;

Robertson; Singer; Talman; Turner; Watts;

Wright; Yancey

Assistant Clinical Professor Emeritus: Barnes

Clinical Associates: Byrd; Chewing; Gianoulis;

Herring; Jones, W. R.; Peple

Clinical Instructors: Boone; Boyer; Caspari; Christie;

Clements; Feminella; Frederick; Gaertner; James;

Johnson; Johnstone; Lublin; Macys; Meyers;

Olshansky; Petty; Pilcher; Rabhan; Rowland;

Seitz; Selph; Stuart; Velo; Watkins; Wilson, J. A.

Division of Neurological Surgery

Professor: Becker (Chairman); Miller, J.; Ulmer

Clinical Professor: Troland

Associate Professor: Young

Assistant Professors: Mendez-Picon; Wilson, J.

Assistant Clinical Professors: Eagles; Kell; Kendrick;

Singer; Wright

Clinical Instructors: Johnson; Velo

Division of Surgical Oncology

Professors: Lawrence (Chairman); Terz

Associate Professor: Kaplan

Assistant Professor: Brown

Division of Orthopedic Surgery

Emeritus Professor: Tucker

Clinical Professors: Carpenter; Clary; Deyerle;

Hoover

Associate Clinical Professor: Butterworth, R.;

McDowell

Assistant Professor: Cardea (Acting Chairman)

Assistant Clinical Professors: Butterworth, J.;

Butterworth, T.; Dalton; Hakala; Mauck; May;

Nachman; Packer; Yancey

Clinical Instructors: Caspari; Clements; Gaertner;

Johnstone; Lublin; Macys; Pilcher; Rabhan; Seitz;

Watkins

Division of Pediatric Surgery

Professor: Salzberg (Chairman)

Assistant Professor: Ehrlich

Division of Plastic and Reconstructive Surgery

Professor: Cohen (Chairman)

Clinical Professor: Smith

Associate Professor: Theogaraj

Associate Clinical Professor: Ware, J. L.

Assistant Professors: Diegelmann; Merritt

Assistant Clinical Professors: Coleman, C. C.;

Jackson

Clinical Instructors: Olshansky; Petty; Wilson

Division of Thoracic and Cardiac Surgery

Professors: Lower (Chairman); Boshier; Brooks, J.

Clinical Professors: Gwathmey; Johns, T.; Zimberg

Assistant Professors: Szentpetery; Thomas

Division of Trauma/General Surgery

Professor: Haynes (Chairman)

Clinical Professors: Coleman, C. L.; Cox; Hill; Markowitz, M.; Williams, C.

Associate Professor: McGuire

Associate Clinical Professors: Carter; Conquest; Harrison; Johns, W.; Natvig; Oates; Pancoast; Rawls; Reid; Royster; Terrell; Williams

Assistant Professors: Halloran; Hutcher

Assistant Clinical Professors: Beazley; Blades, Bryson; Cherry; Crouch; Darden; Drummond; Nevin; Poulos; Riley; Talman; Watts

Clinical Associates: Byrd; Chewning; Gianoulis; Herring; Peple

Clinical Instructors: Christie; Robertson

Division of Vascular/General Surgery

Professors: Lee, H. M. (Chairman); Greenfield; Wolf
Associate Professor: Newsome

Assistant Professors: Bryant; Gayle; Halloran; Levinson; Mendez-Picon; Thomas, J.

Assistant Clinical Professor: Davis, R. K.

Division of Urology

Professor: Koontz (Chairman); Smith, J. V.

Associate Professor: Braf

Associate Clinical Professors: Dodson; Hill, J. E.

Assistant Professors: Hackler; Texter

Assistant Clinical Professors: Atwill; Pole; Tunner

Clinical Associate: Jones, W. R.

Clinical Instructors: Boone; Feminella; Frederick; Rowland; Selph; Stuart

BASIC SCIENCES-Basic science courses are incorporated into the curriculum of the medical students. For details on courses and faculty in the Departments of Anatomy, Biochemistry, Biophysics, Biostatistics, Genetics, Microbiology, Pharmacology and Physiology, see pages 87-93.

GRADUATE PROGRAM IN PATHOLOGY

The Department of Pathology of the School of Medicine offers the Master of Science and Doctor of Philosophy degrees. For details concerning admission and academic requirements, see the section on Programs in Graduate Studies, page 132.

Graduate Offerings

PAT 501. General Pathology (Dentistry). LH-3; Lab H-6; SH-6. I. Instruction in the basic principles regarding alteration of structure and function in disease and in the genesis and effect of disease in the various organ systems.

PAT 509. Basic Immunohematology. LH-3, SH-3. II. A study of the blood groups in man, their mode of in-

heritance, and clinical significance. Pertinent laboratory exercises will be carried out in the blood bank.

PAT 510. Basic Clinical Immunohematology. LH-4; SH-4. I. PR: PAT 509 or consent of instructor. Indications for the transfusion of blood, blood components, and derivatives. Laboratory experience related to the collection and storage of blood, blood components, and blood derivatives.

PAT 513. Blood Banking Laboratory. Lab H-8; SH-4. I, II PR: PAT 509. The laboratory is devoted to exercises in blood grouping, typing, genotyping, antibody screening, antibody identification, detection of Australia antigen (HAA), and the collection of blood from normal donors.

PAT 521. Clinical Chemistry. LH 1-5; SH-1-5. I. PR: BIC 503. This course consists of five parts which may be taken together or separately. Profiles of Disease: 1 credit. Chemical Hematology: 1 credit. Enzyme Changes in Disease: 2 credits. Chemical Changes in Disease: 1 credit. Protein Changes in Disease: 1 credit.

PAT 522. Clinical Chemistry. LH 1-5; SH-1-5. II. PR: BIC 503. This course consists of five parts which may be taken together or separately. Profiles of Disease: 1 credit. Chemical Hematology: 1 credit. Endocrinology: 2 credits. Chemical changes in Disease: 1 credit. Acid-Base and Electrolyte Changes in Disease: 1 credit.

PAT 560. Advanced Oral Pathology. LH-2; SH-2. I. PR: PAT 501. A didactic course on the etiology, clinical histopathologic characteristics, prognosis, and treatment of oral and paraoral lesion.

PAT 561. Oral Pathology Seminar. LH-1; SH-1. II. A thorough review of assigned topic from the current literature is required. Students then report on the clinical, histological, and biological characteristics of the assigned entity.

PAT 580. Experimental Pathology Seminar. LH-1; SH-1. I, II.

PAT 590. Clinical Chemistry Seminar. LH-1; SH-1. I, II. Graduate students, residents, and staff present topics of current interest in clinical chemistry.

PAT 602. Experimental Pathology of Infectious Diseases. LH-2; Lab H-6; SH-5. II. Gross and microscopic pathology are studied in relation to biochemical changes in the disease process. Various infectious and noninfectious diseases are utilized for comparisons of the mechanisms of disease.

PAT 606. Biochemistry of Disease. LH-2; SH-2. II. PR: BIC 503. A detailed study of the biochemical mechanisms involved in the pathogenesis of certain diseases.

PAT 610. Physiology of Blood Coagulation. LH-1; Lab H-4; SH-3. I, II. PR: BIC 503 and PIO 502. The historical development of bleeding and clotting disorders with current diagnostic methodology and treatment.

PAT 613. Pathogenesis of Infectious Disease (Viral Agents). LH-2; Lab H-4; SH-4. I. PR: MIC 502 or equivalent. Discussion of the pathogenesis and epidemiology of viral and rickettsial diseases emphasizing interrelationships of host, parasite, and environment.

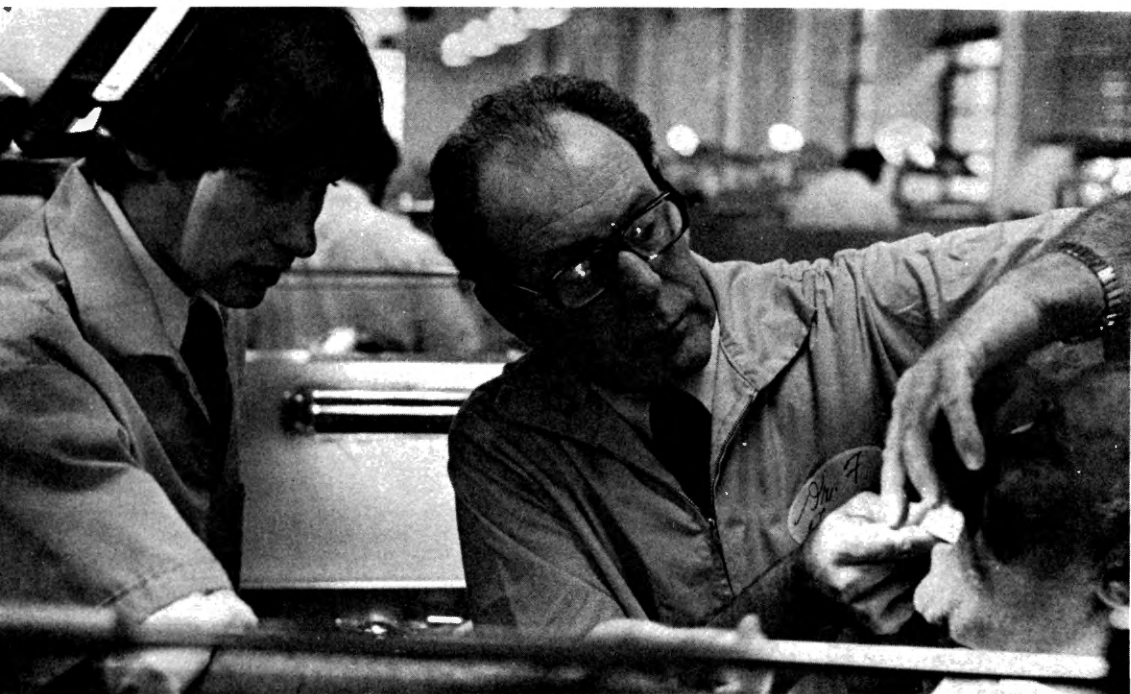
Students learn to evaluate virological procedures as well as the interpretation of laboratory results and their application to diagnostic problems in clinical areas.

PAT 614. Pathogenesis of Infectious Disease (Bacterial Agents). LH-2; Lab H-4; SH-4. II. PR: MIC 515 or equivalent. Emphasis is on the pathogenesis and epidemiology of infectious disease. The dynamic interaction between the host, microorganism, and environment are documented using the data obtained from MCV Hospitals. Students have the opportunity to ap-

ply laboratory data and techniques to present microbiological problems in clinical areas.

PAT 620. Special Topics in Modern Instrumental Methods. LH-1; Lab H-2; SH-2. I, II. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studied.

PAT 690. Research in Pathology. SH-1-15. I, II, S. Research leading to M.S. or Ph.D. degree.



SCHOOL OF DENTISTRY

ADMINISTRATIVE OFFICERS

James E. Kennedy, B.S., D.D.S., M.S.

Acting Dean

James H. Revere, Jr., B.A., D.D.S.

Assistant Dean for Clinical Affairs

F. B. Wiebusch, B.B.A., D.D.S.

Assistant Dean for Continuing Education

Joseph K. Wittemann, B.S., Ph.D.

Director of Educational Evaluation,
Planning, and Research

HISTORY

The MCV/VCU School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the MCV School of Dentistry.

The facilities of the School of Dentistry are housed in the Wood Memorial Building and the Lyons Building. These modern buildings contain clinical facilities, classrooms, student laboratories, group study rooms with individual study alcoves, media library, departmental offices, and closed circuit color television studios with receiver units in laboratories and classrooms. The primary task of the School of Dentistry is the preparation of general practitioners, specialists, research workers, and teachers for the various aspects of dental service.

The program emphasizes the prevention of dental diseases, increased involvement in team activity, close correlation between clinical and basic sciences, greater involvement in extramural activities, and the creation of an environment which fosters learning and investigation.

Programs offered include those for dental students, graduate students in specialty areas, and essential auxiliary personnel.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favorable conditions and in accordance with the standards established by the Council on Dental Education of the American Dental Association. The requirements for admission have the approval of the Virginia State Board of Dental Examiners and are acceptable to dental licensure boards of all other states and the District of Columbia.

The degree of Doctor of Dental Surgery is awarded to graduates.

GOALS AND OBJECTIVES

As its primary mission, the School of Dentistry prepares qualified practitioners to meet the dental needs of the Commonwealth of Virginia, both today and in the years to come. The implications of this objective are extremely broad, since the demand for dental care is increasing at an alarming rate and MCV/VCU boasts the only school of dentistry in the state.

Since it is an accepted premise that the

supply of practitioners will never equal the demand for dental care as we know it today, emphasis in the curriculum is directed toward other solutions to this pressing problem. Two basic approaches considered are:

(1) Increased efficiency through the greater utilization of auxiliary personnel (the team approach).

(2) Emphasis on the early diagnosis and prevention of dental disease, rather than on the treatment of its ultimate consequences.

In the past, dental education has focused considerable attention on the mastery of digital skills. Although it must be clearly understood that a dentist must be able to perform certain technical procedures, an overemphasis on this portion of the student's total educational experience can only result in a loss of opportunities to develop an appreciation for fundamental underlying concepts. Further, early exposure to clinical circumstances has been shown to be extremely advantageous and without damaging repercussions to patients. When such experiences occur early in the student's career, more time can be devoted to academic pursuits in the upper classes.

Careful consideration is also given to enhancing the correlation of basic and clinical science teaching. All courses, both in the basic and clinical sciences, are critically analyzed in regard to content in order to assure that the student derives maximum benefit from the time he devotes to his studies.

The memorization of facts no longer has a valid purpose within the curriculum. Since vast cultural and scientific changes are occurring within a single lifetime (for the first time in history) and since the half life of knowledge is now considered to be no more than 10 years, the direction of education must be refocused to teach the student how to learn. In this manner, the graduate can devote an entire lifetime to personal growth, both to his advantage and to the benefit of the patients for whom he accepts responsibility. De-emphasis of traditional lectures is encouraged with a concurrent emphasis on reading, seminars, and the use of self-study aids. In this manner, understanding of concepts replaces regurgitation of facts.

Increased attention to disciplines involving a population that is living longer must be considered. Periodontal disease will certainly be more important than caries in the future. Oral neoplasms are far more common in the elderly than in the young. Thus, diagnostic

skill and ability to construct maxillofacial prostheses becomes more critical. The increasing demand for the replacement of teeth with fixed and removable partial prostheses by an enlightened populace requires that the student have a fundamental understanding of occlusion. Hopefully, the demand for complete prostheses will decrease.

Involvement of the student in a hospital atmosphere must also be considered. The evolution of group practices, involving not only the various disciplines of dentistry, but also related specialties of medicine, appears to be on the horizon. Preparation for such an eventuality is paramount.

Larger numbers of auxiliary personnel of every type must be produced. Training in expanded duties for auxiliaries must be instituted, as well as programs to orient students and practitioners to the utilization of individuals with such additional skills.

Finally, the need to create an awareness in the student of the environment that surrounds him is a major objective of the school. This is best accomplished by exposing the student to extramural experiences, where he is confronted with harsh realities of the society in which he must function. Such experiences involve a spectrum of situations so that the student does not become overly complacent or cynical.

In summary, the mission of the school to prepare qualified practitioners for the Commonwealth can best be accomplished through the following activities:

(1) An emphasis on the understanding of concepts, rather than on the memorization of facts.

(2) A philosophy of education that emphasizes prevention rather than treatment.

(3) An integrated program leading to a close correlation between clinical and basic sciences.

(4) An open, free teaching environment where the student is given the opportunity to interact with his peers and the instructor.

(5) An increased focus on the team approach, fully utilizing all auxiliaries.

(6) A greater involvement in extramural activities, including hospital and community experiences.

(7) A constant reassessment of teaching areas, in order to assure exposure of students to concepts applicable to the practice of tomorrow.

The school must also assume the further responsibilities of providing advanced education experiences for the practicing dentists, exploring means of improving services and teaching, and pursuing research in the various aspects of dental health.

FINANCIAL ASSISTANCE

The Health Professions Student Loan Program, Health Professions Student Scholarship Program, Rural Virginia Dental Scholarships, American Fund for Dental Health, and local college funds are designed to give financial aid to students undertaking the course of study required for dentistry.

Full information on financial assistance is carried in a pamphlet, *Financial Assistance for Students*, which may be obtained by a request to the Financial Aid Office, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 244, Richmond, Virginia 23298.

Armed Forces Health Professions Scholarship Program

This program provides scholarships for students in the health-care field. An eligible student applies to one of the three branches of the armed forces of his choice. If selected, he is commissioned as a second lieutenant or ensign in the inactive reserve. While in the program the student receives a stipend of \$400 per month in addition to payment of tuition, mandatory fees, and related academic expenses. The student incurs an obligation of one year of active, commission service for each year or fraction of a year of program participation. All participants incur a minimum tour of two years. For further information concerning the scholarship program you may write to one of the following: U. S. Army, Department of the Army, DASG-PTP, Washington, D. C. 20314; U. S. Navy, Bureau of Medicine and Surgery, Navy Department (Code 3174), Washington, D. C. 20372; U. S. Air Force, ATC/RSOS Randolph Air Force Base, Texas 78148.

HONORS

The School of Dentistry has a chapter of Omicron Kappa Upsilon, the national honorary dental society. Each year the society selects those students who, in addition to scholarship, have demonstrated exemplary traits of character and potential qualities of future professional growth and attainments.

A certain percentage of junior and senior students are selected each year to become members of Sigma Zeta and Alpha Sigma Chi, honorary scientific societies.

The Alpha Omega Scholarship Award is presented to the graduating student who has attained the highest scholastic rating for his four years of dental study.

At the end of each academic year, senior students are recognized for their outstanding achievements in various dental areas. Awards are presented at the annual Honors and Awards Convocation to which students, parents, and faculty are invited.

A. D. Williams Award. An annual stipend may be made, on the nomination of the faculty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award which is made at the end of the academic year.

Yingling-Lyons Senior Achievement Award. Gifts to the institution at the time of the marriage of Dean Doris B. Yingling of the School of Nursing and Dean Harry Lyons of the School of Dentistry were used to establish an annual award in their names to be made to a senior student in each of the Schools of Nursing and Dentistry, based on recognition of outstanding leadership ability and potential professional growth as determined by a selection committee of faculty and students.

POSTDOCTORAL TRAINING PROGRAMS

Endodontics

The postdoctoral training program in endodontics is designed to educate qualified individuals to pursue careers as teachers, researchers in the biological sciences, and practicing specialists.

The basic 21-month certificate program is composed of two interrelated phases. The first consists of lecture courses in the School of Basic Sciences which provide the student with a firm biological basis for patient care. The second phase consists of lectures, seminars, and clinical training which is designed to produce clinical proficiency. Research experience is gained through the completion of an individual research project. The entire program conforms with the guidelines established by the American Board of Endodontics and the Education Committee of the American Association of Endodontics.

Since the major emphasis of the program is on teaching and research, the students have the option, within an expanded time frame, to seek advanced degrees (M.S. or Ph.D.). The curriculum is designed on an individual basis by the basic sciences advisor and the director of postgraduate endodontics.

Oral and Maxillofacial Surgery

The oral and maxillofacial surgery training program is fully accredited and is approved by the Commission on Dental Education of the A.D.A. and those who complete the program in a satisfactory manner fulfill the prerequisites set down by the American Board of Oral Surgery and are eligible for examination by that board.

The program is designed to include three interns, three junior assistant residents, three assistant residents, and three residents. Selection of the interns is in accordance with the suggestions of the Commission on Dental Education.

Didactic courses and, where appropriate, extensive clerical exposure is provided over the four year period in such areas as: oral pathology, anatomy, physical diagnosis and patient evaluation, pharmacology, anesthesiology, medicine, surgical oncology, neurosurgery, plastic surgery, emergency room, and private rotations.

Some of the specifics concerning these courses and notations are:

A four to six month full-time assignment in the Department of Anesthesia which includes clinical and didactic exposure. In addition, a formal course particularly oriented to out-patient anesthesia is presented by the oral surgery staff.

Extensive exposure in oral pathology over four years is provided in a formal format and may be applied for credit in the graduate school.

A broadly oriented series of lectures is provided in physical diagnosis by the Department of Medicine and is supplemented by a three-month rotation on the medical service.

A specific series of lectures, seminars, and laboratory experiences is given at staggered intervals and includes anatomy, hematology, oral surgery, physiology, and other related areas. When in depth postgraduate continuing education courses are given by the university on specific subjects of interest such as anatomy, arrangements are made for the trainees to participate.

There is constant correlation of the trainee's clinical experience with ever increasing responsibility for patient care. Part of this experience is gained at McGuire Veterans Hospital and at other hospitals in the metropolitan area working with the part-time attending staff. Closer relationships are constantly being developed.

The oral surgery service is responsible for all diseases related to the oral cavity and its associated structure, including full responsibility for facial trauma as it relates to the mandible and maxilla. In addition, interns spend two months on the surgical oncology service where they are oriented in the problems of oral malignancy and the total patient care. The assistant residents and residents act as consultants to this department and are involved in all cases related to head and neck oncology. The oral surgery service is responsible in many cases for the reconstruction of these patients following the initial surgery.

There is an excellent working agreement with the dental school where the oral surgery service secures a considerable amount of its material, particularly in the areas of facial deformities, prosthetic surgery, and other specialized areas. As more experience is developed, the resident staff is responsible for some teaching of the undergraduate since this is considered an important adjunct to their learning process. A research project is desirable, depending upon the trainee's interest, abilities, and time.

Oral Pathology

Training is divided into two interlocking phases. The first phase, following the guidelines of the American Council on Dental Education as endorsed by the ABOP and AAOP, is designed to develop an individual's competency in oral pathology. The major emphasis of the second phase is on research experience and training in one of the basic sciences (anatomy, biochemistry, pharmacology, physiology, microbiology). To this end the trainee becomes accepted as a candidate for an advanced degree (M.S. or Ph.D.) in one of the basic sciences and simultaneously completes a residency program in pathology. The latter satisfies requirements for board eligibility of the ABOP. The course outline for graduate students is worked out jointly by the chairman of the selected basic science department and the graduate advisors for pathology training. The final course plan is subject to approval by the chairman of the graduate coun-

cil. Applicants may be eligible, if accepted, for an annual stipend and clinical fellowship on a competitive basis.

Orthodontics

This postgraduate program is for 21 months beginning each July and is completed in March of the second year. The curriculum includes courses in anatomy, genetics, oral pathology, and statistics, as well as facial growth and theoretical and clinical orthodontics given in the Department of Orthodontics. The primary emphasis for this certificate program is on clinical competence and includes coordination of treatment with plastic and oral surgery. The completion of a research project is a requirement of the program.

A graduate program, which requires approximately 33 months to complete, is also available. In addition to a certificate in orthodontics, this program leads to a master's degree in one of the basic sciences. The curriculum is designed for each individual by the orthodontic department and the basic science department concerned.

Periodontics

The residency program in periodontics consists of a 24-month curriculum designed to satisfy the educational requirements for certification of eligibility for limitation of practice to periodontics and examination by the American Board of Periodontology. The curriculum includes 11 credit hours in the basic sciences plus seminars, lectures, and clinics. All provide opportunities for concentrated learning and experience in the clinical specialty of periodontics as well as interaction with inter-related areas of general dentistry and other clinical specialties. The philosophy of the program requires that the student develop capacity for judgement and adaptability from knowledge of basic science and reliance on evaluation of published reports.

For students interested in pursuing academic careers, the residency may be expanded to include research experience or combined with a M.S. or Ph.D. degree. (See page 137.) The curriculum for the combined residency/degree program is individualized, building upon the requirements for the residency in the basic science department of interest.

Preference is given to qualified applicants seeking an academic/research oriented program, to the extent of 50 percent of students enrolled.

DIVISION OF CONTINUING EDUCATION

F. B. Wiebusch, D.D.S.

Assistant Dean for Continuing Education

For every professional person who serves the health sciences, education must be a life-time process.

Graduation from dental school is the beginning of a continuous educational experience for the serious, conscientious student of dentistry. Regardless of how well prepared a professional person may be at the time he completes his education, the adequate knowledge of yesterday is often insufficient information for today and tomorrow. With the rapid advancements made in dental concepts and techniques, the professional person must constantly seek new knowledge if he is to improve the health care he gives his patients.

Although the majority of continuing education courses are presented at the School of Dentistry, some offerings are given in other locations. The courses, which vary in length from one day to three days, are scheduled from August through June and consist of a variety of instructional methods—from didactic and television presentations to the individual's participation in clinical procedures.

The instructional staff for these endeavors is comprised of teachers from the MCV/VCU School of Dentistry, guest lecturers from other dental schools, and members of the dental profession and related professions in the state of Virginia.

ADMISSION REQUIREMENTS

Admission to the School of Dentistry is sought by many more persons than the educational facilities can accommodate. Approximately 110 first-year students will be enrolled each fall.

The task of the Admissions Committee is to select those applicants whose academic background, motivation, and personal characteristics indicate the highest probability of successful completion of the curriculum and development as a dental practitioner.

Every applicant must complete a minimum of at least two years of pre-professional education. Applicants with three or four years of undergraduate study are generally considered to be better prepared than those with minimal preparation; however, exceptional two-year applicants will be considered.

Each applicant's record will be evaluated on its own merit; however, it is highly recommended that the pre-dental program include biology, organic chemistry, mathematics, English, and courses in the behavioral sciences. Each applicant is encouraged to pursue areas of interest beyond the introductory level. Laboratory experience should be included in those courses where applicable. The student should select subjects that challenge him/her to maximum performance and contribute to his/her overall development and maturation. The quality of courses taken and the performance in such courses will be considered.

Credits must be earned in a college of liberal arts and sciences that is fully accredited by the Association of American Universities or by a regional accrediting agency.

Academic credits presented by an applicant must be acceptable for credit toward a baccalaureate degree in the institution in which the courses were taken.

Academic credits for courses recommended for admission should be earned by June preceding the desired September admission date.

Evaluations from instructors and advisors or pre-dental committees and the Dental Admissions Test or the American Dental Association are required. It is strongly recommended that applicants take the Dental Admission Test in April or October of the year preceding the desired September admission date.

The Admissions Committee may, at its discretion, request the applicant to appear before the committee or its individual members for an interview. This permits the candidate to present personal information to the committee and also provides the opportunity for members of the committee to appraise and become better acquainted with the applicant. In order for the applicant to become acquainted with the philosophies, programs, and facilities of the school, a personal interview by previously arranged appointment may be requested by the applicant.

Virginia Commonwealth University is a state-supported institution and therefore gives admission preference to qualified Virginians. A limited number of well-qualified non-Virginians may be admitted each year.

PROCEDURES

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applicants are required to submit credentials through this service. Information may be obtained from

our admissions office or from AADSAS, P. O. Box 1003, Iowa City, Iowa 52240. Application forms are generally available after June 1 and should be filed for processing between June 1 and December 15 in the year preceding the desired September admission date. This application **must** be completed and returned to AADSAS by December 15 to be considered valid.

Upon receipt from AADSAS the credentials on each applicant are reviewed by the Admissions Committee. Applicants will be notified in writing in regard to submitting the additional required information, forms, and procedures.

Within 30 days of being notified of appointment to the entering class, the applicant is required to pay a deposit of \$200 toward tuition for the first year. This fee may not be refunded. Authorization to matriculate constitutes an agreement for the reservation of a place in the class entering for the session cited. Should this deposit not be received by the Office of Admissions within the 30 day period, reservation will be cancelled and the position offered to another applicant.

The act of matriculation implies a willingness on the part of the student to comply with university rules and regulations, to take an interest in maintaining the ideals of the institution, and to conduct himself in a manner befitting members of the profession he seeks to enter.

For further details regarding the dental curriculum contact: Director of Admissions, School of Dentistry, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Richmond, Virginia 23298. Telephone: (804) 770-8247.

For application information contact: Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Richmond, Virginia 23298. Telephone: (804) 770-4888.

CURRICULUM

The curriculum in the dental school is organized into a four-year program leading to the Doctor of Dental Surgery (D.D.S.) degree. The program emphasizes study in three broad areas: basic sciences, clinical sciences, and social sciences.

The basic sciences include in depth study of anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology.

The clinical sciences prepare the student for the actual practice of dentistry and expose him to the various specialties in dentistry.

The behavioral sciences cover such topics as dental health needs, the system of health care delivery, practice management, professional ethics, and behavioral factors. Laboratory and clinical experiences are offered throughout the four years to develop within the student the skills vital to the practice of general dentistry.

SENIOR ELECTIVE CURRICULUM

Recognizing that individual students have different needs and goals, the School of Dentistry offers a didactic clinically oriented elective senior year. Elective courses have been developed so that students who have an interest in further developing competency in a particular area may do so without adherence to a rigid curriculum. In addition, this program allows students, who have demonstrated or feel a lack of competence in an area to shore up their educational experience. This program also allows those who have not defined their goals to expose themselves to an assortment of courses which may lead to career options they have not yet encountered.

Continuation of clinical assignments and patient care is required during this experience.

Each semester a new elective catalog is published containing courses offered by the various departments and divisions of the School of Dentistry as well as other schools of the university.

COMBINED D.D.S. AND M.S. OR PH.D. PROGRAMS

The dental curriculum with free time for elective courses and research provides an excellent opportunity for interested dental students to enter a combined D.D.S./M.S. or Ph.D. program. For details see the section on graduate studies page 137.

CURRICULUM

FRESHMAN, FIRST SEMESTER

		Credit Hours
RED 511.	Dental Anatomy.....	4.5
GPD 511.	Environment of Dental Profession.....	3.0
BIC 501.	Biochemistry.....	5.0

ANA 501.	Microscopic Anatomy	6.0
OCC 513.	Occlusion I, (continues in second semester).....	1.0
GEN 530.	Genetics.....	1.0
ANA 503.	Facial Growth and Development.....	2.0

FRESHMAN, SECOND SEMESTER

GPD 512.	Health, Disease, and Prevention of Dental Disease.....	2.5
PER 512.	Anatomy, Physiology, and Pathology of the Periodontium	2.0
PIO 502	Mammalian Physiology	5.0
ANA 502.	Dental Gross Anatomy.....	7.5
RED 514.	Introduction to Principles of Occlusion	2.0
RED 512	Restorative Dentistry I	2.0
BAS 504.	Neurosciences.....	4.0
ORP 512.	Oral Pathology —Survey Part I (x-ray)5
OPR 515.	Oral Pathology —Survey Part II (oral exam).....	.5
MIC 512.	Sterilization, Disinfection, and Asepsis5
OCC 513.	Occlusion I.....	2.0

SOPHOMORE, FIRST SEMESTER

GPD 525.	Nutrition.....	1.0
ORT 521.	Orthodontics	1.5
PMC 509.	Pharmacology and Pain Control (continues in second semester)	
RED 523.	Restorative Dentistry II (continues second semester)	
END 521.	Principles of Endodontics.....	2.0
PER 521.	Etiology and Epidemiology of Periodontal Diseases	2.0
MIC 523.	Infections and Immunity	1.0
PAT 501.	General Pathology	6.0
OCC 521.	Occlusion II.....	2.0
GPD 521.	Preclinical Skills Laboratory	2.0

SOPHOMORE, SECOND SEMESTER

ORT 522.	Orthodontics	1.0
PER 522.	Diagnosis and Treatment Planning for Periodontal Therapy.....	1.0
PED 522.	Pediatric Dentistry II	2.0
MIC 523.	Microbiology	4.0
ORP 522.	Oral Pathology	2.5
REP 522.	Preclinical Complete Denture Prosthodontics.....	3.0

ORS 522.	Oral Surgery I.....	1.0
OCC 522.	Occlusion III.....	1.5
GPD 522.	Human Behavior.....	2.0
RED 523.	Restorative Dentistry II.....	8.0
DTP 522.	Dental Auxiliary Utilization.....	1.0
PMC 509.	Pharmacology and Pain Control	6.0

JUNIOR, FIRST SEMESTER

LEM 532.	Dental Jurisprudence.....	.5
REP 533.	Complete Denture Prosthodontics (continues in second semester)	
REP 532.	Partial Denture Prosthodontics (continues in second semester)	
REP 535.	Preclinical Partial Denture Prosthodontics	3.0
ORT 533.	Orthodontics (continues in second semester)	
ORS 533.	Oral Surgery II (continues in second semester)	
END 531.	Endodontic Therapy.....	.5
ANA 505.	Head and Neck Anatomy.....	3.0
RED 533.	Restorative Dentistry III (continues in second semester)	
PER 531.	Periodontal Therapy.....	2.0
PED 533.	Pediatric Dentistry III (continues in second semester)	

JUNIOR, SECOND SEMESTER

ORT 533.	Orthodontics	1.5
ORS 533.	Oral Surgery II.....	3.0
REP 533.	Complete Denture Prosthodontics	2.0
REP 532.	Partial Denture Prosthodontics	1.0
RED 533.	Restorative Dentistry III.....	2.0
PED 533.	Pediatric Dentistry III.....	2.5
ORS 532.	Principles of Surgery.....	.5
ORP 532.	Oncology.....	.5
ORP 534.	Management of Oral Pathosis.....	1.0
DTP 532.	Management of Human Resources	2.0
PRM 532.	Principles of Medicine.....	1.0
DTP 535.	Office Management.....	1.0

CLINIC YEARS (D-3, D-4)

DTP 539.	Dental Auxiliary Utilization	2.0
ORP 539.	Diagnosis Clinic.....	.5
ORP 539.	Radiology Clinic5
ORP 549.	Diagnosis Clinic.....	.5
ORP 549.	Radiology Clinic5
END 549.	Clinical Endodontics.....	3.5
ORS 549.	Oral Surgery III.....	3.5

ORT 549.	Clinical Orthodontics.....	2.0
PED 549.	Clinical Pediatric Dentistry.....	11.0
PED 549.	Clinical Periodontics.....	7.0
REP 539.	Clinical Complete Denture Prosthodontics	3.5
REP 549.	Clinical Removable Partial Denture Prosthodontics.....	3.5
RED 549.	Clinical Restorative Dentistry	14.0
GPD 549.	Preventive Services Clinic	1.0

ACADEMIC PERFORMANCE COMMITTEE GUIDELINES

"The primary mission of this School of Dentistry shall be the preparation of qualified practitioners to meet the dental needs of the Commonwealth of Virginia, both today and in the years to come."¹

In order to determine that the student is becoming or has become a "qualified practitioner" of dentistry or dental hygiene, the faculty of the MCV/VCU School of Dentistry has the responsibility for evaluating the student's academic performance. In addition, the course director may take into consideration other information that influences the student's academic performance.* It is incumbent on the director of the course or his delegate to specify, at the time that the course first convenes, the criteria to be used in student assessment and the standards by which they will be judged.

Awarding of Grades

As a result of the faculty's evaluation, each student may obtain those grades listed in the Medical College of Virginia *Bulletin*. Special grade considerations are as follows:

I = Incomplete—Course requirements have not been completed. This grade is reserved for those situations in which the student has been unable to complete the course requirements for justified reasons. Subsequently, the student must complete the courses in which he is deficient in order to earn a final grade. A student may be required to retake an examination or complete additional clinical material at the discretion of course director and/or chairman of the department. The time allowed for the removal of the "I" is at the discretion of the course director and/or chairman of the department with the approval of the Academic Perfor-

¹ J. A. DiBiaggio, Goals and Objectives for the School of Dentistry (Virginia Commonwealth University), 1970.

* For additional information please refer to p 45 in the 1976-1977 Medical College of Virginia *Bulletin*.

mance Committee but in no instance may this extend beyond the second semester following the semester in which the grade of "I" was incurred.

When a deadline has been established to remove a grade of "Incomplete," the student assumes the responsibility for completing the course requirements. When the student has not met the specified deadline to remove the "I," a final grade of "F" will be given and grade changes may only be accomplished through the grade appeals procedure.

PR = Progress— In addition, progress grades will be issued for continuing didactic and clinical courses at the end of each semester and recorded only in the School of Dentistry. The notations are as follows:

PR-S (progress satisfactory)

PR-U (progress unsatisfactory).

Progress grades ("PR-S" or "PR-U") will not appear as part of the permanent record. A final grade will be rendered and recorded upon the completion of the courses.

Academic Performance Decisions

On the basis of the compiled grade record for each student, the Academic Performance Committee of the faculty of the School of Dentistry may recommend graduation, promotion, probation, repetition of a year, or dismissal for each student to the Faculty Council for action. Each case will be reviewed individually and recommendations will be presented individually in cases of probation, repetition, or dismissal.

The student has the right to appeal any grade rendered through the grade appeal process of the university and to appeal decisions of the Faculty Council through the appeal process of the School of Dentistry.

Upon recommendation of a course director, and/or departmental chairman or staff member, the Academic Performance Committee will utilize the preceding criteria in the decision process affecting promotion and/or graduation.

Graduation.— Students will be considered for graduation if they have a cumulative grade point average of a 2.0 or higher and have successfully completed all their requirements.

However, students who have a 2.0 cumulative average or higher and who have earned one or more "D" grades in clinical courses during their senior year will be subject to further review and may not be recommended for graduation. Information related to status of

patient(s) in the student's care will be considered in the deliberations.

Promotion.— Students who have achieved a grade point average of 2.0 or higher and who have not failed a course in a given academic year will be *considered* for unconditional promotion. When a student has one or more incomplete grades, he may be promoted conditionally and upon removing his incomplete grades according to specified guidelines noted above be promoted. His grade point average will be recomputed.

Conditions for Non-promotion.

(1) *A Failing Grade in One Course*— Any student who has one failing grade may be recommended for promotion provided that the failing grade can be satisfactorily removed before the next academic year or in the time frame determined by the course director(s) and the Academic Performance Committee.

Upon satisfactorily completing the course wherein a grade of "F" is recorded the new grade will be added and recorded on the student's permanent record and entered into the compilation of his GPA. Both grades will be computed in determining the students GPA.

(2) *A Failing Grade in Two or More Courses*— Upon review by the Academic Performance Committee, a student who fails two or more courses in an academic year shall be subject to (a) repetition of the year; (b) dismissal, unless the failing grades can be removed prior to the next academic year; (c) or other action as determined by the Academic Performance Committee.

(3) *Failure to Achieve a 2.0 Grade Point Average*— The disposition of all cases in which a student has failed to achieve a 2.0 grade point average will be determined on an individual basis by the Academic Performance Committee. All students who fail to achieve a 2.0 grade point average in any given semester are automatically placed on academic probation.

If the cumulative grade point average is below a 2.0, the Academic Performance Committee may recommend conditional promotion, the repetition of the year, dismissal from the institution, or other action as determined by the Academic Performance Committee.

(4) *Successive Probation*— A student on probation for two successive semesters will be subject to repetition, dismissal, or other action as determined by the Academic Performance Committee.

Division of Dental Hygiene

The Division of Dental Hygiene instituted in 1969 offers courses at the School of Dentistry leading to a Bachelor of Science degree in dental hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study in dental hygiene. The Division of Dental Hygiene is accredited by the Council on Dental Education of the American Dental Association. Upon successful completion of the program, graduates will be eligible for national, regional, and state board licensure examinations.

PHILOSOPHY AND GENERAL OBJECTIVES

The dental hygiene program is set within the framework of the general purpose of the university: to provide an educational environment nurturing and stimulating teaching, research, and service. Sensitive to the needs of urban life in the Commonwealth, it strives to promote the pursuit of knowledge and the dissemination of professional skills.

The objectives of the baccalaureate degree program in dental hygiene are to:

1. Develop a high degree of scientific knowledge, skill, and judgment in preparing individuals to assume professional responsibility as members of the dental health team in private office practice, public health, and education.
2. Contribute toward personal growth and self-development in preparation for assuming responsibilities and leadership as members of a health profession and as citizens in a complex society.
3. Provide a solid foundation for study on the graduate level (dental hygiene education, public health, education, basic science).

HONORS AND AWARDS

Sigma Phi Alpha is the National Dental Hygiene Honor Society. Senior dental hygiene students are elected to membership who rank highest in scholarship and character and exhibit potential qualities for future growth and attainment as recommended by faculty members. Membership is limited to 10 percent of the graduating class and is selected from the upper 20 percent of the class. If 10 percent of the class is fewer than two, a maximum of two seniors may be elected.

Virginia Dental Hygienists' Association Award. An annual award is made to one graduating senior and is based on the student's scholastic ability, clinical proficiency, and professional contributions. A one-year membership in the American Dental Hygienists' Association and a certificate are presented to the selected student and the individual's name is engraved on the school plaque.

A. D. Williams Award. An annual stipend may be made, on the nomination of the faculty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award which is made at the end of the academic year.

FINANCIAL AID

Scholarships are available through the American Dental Hygienists' Association, the Women's Auxiliary to the Virginia Dental Association, the Women's Auxiliary to the Richmond Dental Society, and the Virginia State Department of Health. Additional aid is available through the Virginia Dental Association, the loan funds of the Virginia Dental Hygienists' Association and American Dental Hygienists' Association and the Financial Aid Office of the MCV Campus of VCU. (Full information on financial aid is available upon request from the: Financial Aid Office, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 244, Richmond, Virginia 23298.)

Dental hygiene students qualify for the National Defense Student Loan Program and the Veterans Administration Benefits.

ADMISSION REQUIREMENTS

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic courses are required.

A. Courses

1. Specific
 - a. English—1 year
 - b. Biology
 - c. Chemistry—1 year
 - d. Anatomy and Physiology
 - e. Introductory sociology
 - f. Introductory psychology
 - g. Introductory speech

2. Approved electives fulfilling the distribution requirements of the liberal arts college or university currently attending. Courses in microbiology, organic chemistry, and basic statistics are recommended.

- B. At least a "C" average must be earned for all work undertaken.
- C. Applicants should take the Dental Hygiene Aptitude Test by November preceding the fall admission date.
- D. Dental and medical examinations required prior to matriculation must indicate good general health and a satisfactory dental condition.
- E. A personal interview by a previously arranged appointment is requested prior to admission.

For further details regarding the dental hygiene program contact: Division of Dental Hygiene, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 637, Richmond, Virginia 23298. Telephone: (804) 770-4506.

For application information contact: Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298. Telephone: (804) 770-4888.

GRADUATION REQUIREMENTS

In addition to those stipulations listed for the School of Dentistry a current American Red Cross standard or Advanced First Aid Certificate is required.

CURRICULUM

The dental hygiene program includes study of the basic, dental, and clinical sciences through lecture, laboratory, clinical, and community experiences.

THIRD YEAR, FALL SEMESTER

	Semester Hours
DEH 301. Dental Hygiene I	4
RED 301. Oral Histology and Embryology	1
RED 311. Dental Morphology	2
BAS 361. Health Science I	7
MIC 365. Infection and Immunity	3
	17

SPRING SEMESTER

DEH 302. Dental Hygiene II	6
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ORP 302. General and Oral Pathology	3
RED 302. Dental Materials	2
DEH 312. Community Dental Health I	3
ANA 506. Head and Neck Anatomy	3
PER 512. Anatomy and Physiology and Pathology of the Periodontium	2
	19

FOURTH YEAR, FALL SEMESTER

DEH 401. Dental Hygiene III	7
DEH 411. Community Dental Health II	2
PMC 441. Pharmacology and Pain Control	6
PER 522. Etiology and Epidemiology of Periodontal Disease	2
	17

SPRING SEMESTER

DEH 402. Dental Hygiene IV	5
DEH 412. Community Dental Health III	4
DEH 422. Dental Hygiene Seminar I	2
DEH 432. Dental Hygiene Seminar II	2
DEH 442. Dental Hygiene Seminar III	2
	13-15

DEPARTMENTS AND DIVISIONS OF INSTRUCTION

Some courses in the School of Dentistry are taught in blocks of time which do not lend themselves to identification by lecture or laboratory hours per week. In lieu of this the hours in those courses are identified by total hours taught.

Department of Endodontics

Professor: Green (Chairman)
Emeritus Professor: Knighton
Associate Professor: England
Assistant Professors: Kemp; Weissburg
Assistant Clinical Professors: Bussey; Eleazer;
Haber; Hake; Lance; Miller
Clinical Instructor: Sainsbury

END 521. Principles of Endodontics. LH-1; Lab H-2. I. The prevention, diagnosis, and treatment of injuries and diseases of the dental pulp and periapical tissues are studied. Self-paced learning is emphasized in the cognitive and psychomotor phases of the course. Progress is determined by proficiency and written examinations.

END 531. Clinical Endodontic Therapy. LH-12 total; CI H-20 total. I, II. A seminar format is used to explore the following topics: basic principles of endodontic diagnosis; mechanisms of pulpal and periapical pain; emergency treatment including trauma; pulp capping; surgery; implantation, replantation, and transplantation;

dental caries and their sequelae; apexification procedures.

END 549. Clinical Endodontics. CI H-90 total. Each student has the opportunity to perform clinical endodontic therapy for a number of patients to demonstrate his proficiency in diagnosis and emergency treatment of pulpal disease, pain control, and conservative endodontic therapy. Participation is required for all fourth-year students unless exempted by the faculty.

Department of Community Dentistry

Associate Professors: Cheney (Chairman); Depaola; Fishman; Witteman

Assistant Professors: Odom; Zucker

Assistant Clinical Professor: Ortiz

Clinical Instructors: Adams; Mansell; Price; Williams

GPD 511. Environment of Dental Profession. LH-3. I. An overview of the dental profession is presented covering (1) the service nature of the profession, (2) the social nature of the profession, and (3) the scientific nature of the profession.

GPD 512. Health, Disease, and Prevention of Dental Disease. LH-2; CI H-2. II. Didactic, clinical, and field experiences providing the scientific aspects of the study of dental disease. Emphasis will be placed on the primary role of prevention of dental diseases.

GPD 521. Pre-Clinical Skills Laboratory. LH-1; CI H-3. I. Students acquire skills through multiple practice in a pre-clinical setting.

GPD 522. Human Behavior. LH-2. II. This seminar investigates the principles and dynamics of the human relationship in dentistry. Through lecture, discussion, and clinical experience, it analyzes the psychological and social components of this relationship and how they help or hinder dentistry. The seminar focuses on the student's developing self-concept and his relationship with his colleagues and patients.

GPD 525. Nutrition. LH-1. I. The course is designed to give the student a practical approach to nutrition today which he can utilize both in his practice of dentistry as well as in his own lifestyle. The course is not designed to make the student an expert in nutrition, nor is it expected that the student become one. Rather, the course should demonstrate the basic principles of good nutrition and how chronic and, in some cases, acute violation of these principles will lead to, or contribute to, the etiology and progression of oral disease.

GPD 549. Preventive Services Clinic. CI H-40 total. The objectives of a clinical preventive dentistry program are broad in scope and are not necessarily limited to the confines of preventing caries and periodontal disease. Rather, the prevention of oral disease should be viewed as a fundamental link in the total health care of the patient. The objectives of this program, then, begin with the early recognition of a health problem—then diagnosis. After the diagnosis has been achieved, a realistic plan of action can be formulated—the treatment plan. Finally, the preventive treatment plan can

be integrated into the overall treatment of the patient. The general goal of this program is to place emphasis on the early diagnosis and prevention of disease, rather than on the treatment of its ultimate consequences.

Department of Medicine

Professor: Richardson and Staff

PRM 532. Principles of Medicine. LH-1, II. A study of the symptoms and signs of the more common diseases and important therapeutic principles.

Department of Oral Pathology

Professors: Elzay (Chairman); Salley; Syrop

Director, Division of Radiology: Abbey

Director of Screening and Emergency Clinics: Stone

Director, Division of Dental Records: Syrop

Associate Professor: Abbey

Associate Clinical Professors: Filipowicz

Assistant Professors: Page; Stone;

Sweeney

Assistant Clinical Professor: Quisenberry

Clinical Instructor: Carr

ORP 302. General and Oral Pathology. (Dental Hygiene) LH-3. II. Instruction in the basic principles regarding alteration of the structure and function of disease in the organ systems.

ORP 512. Survey—Part I. LH-7 total. II. A lecture-demonstration course covering the fundamentals of radiology as applied to dental practice, emphasizing principles of radiation, techniques of producing intraoral radiographs, and interpretation of normal structures.

ORP 515. Survey—Part II. LH-7 total. II. This course is designed to acquaint the student with oral and paraoral examination procedures.

ORP 522. Oral Pathology. LH-2; Lab H-2. II. A study of the histomorphologic, clinical, and radiographic manifestations of diseases of the hard and soft oral and paraoral tissues.

ORP 532. Oncology. LH-7. II. This course reviews all aspects of oncology viewed from a multidisciplinary approach. Lecturers include a surgical pathologist, medical oncologist, radiotherapists, a surgeon, and a maxillofacial prosthodontist.

ORP 534. Management of Oral Pathosis. LH-1. II. The student is provided the opportunity to gain proficiency in the collection of descriptive diagnostic data, sufficient to develop a rational pathway for the recognition of disease entities and their effective therapeutic considerations.

ORP 539. Diagnosis Clinic. CI H-15; on assignment.

ORP 539. Radiology Clinic. CI H-24 total. On assignment.

ORP 549. Diagnosis Clinic. CI H-15; on assignment.

ORP 549. Radiology Clinic. CI H-24 total. On assignment.

Department of Oral and Maxillofacial Surgery

Professor: Bear (Chairman)

Assistant Professors: Alexander; Pirok; Shipman
(Maxillofacial Prosthodontics); Watkins

Clinical Professor: Smith

Associate Clinical Professor: Peters

Assistant Clinical Professors: Alexander; Bissell;
Clough; Cuttino; Dodson; Green; Kangur;
Malbon; Schwartz; Smilek; Tankersely

ORS 522. Oral Surgery I. LH-1. II. The course is designed to present didactic material relative to the basic concepts of oral surgery, including emergency care, the removal of eruptive teeth, preparation of the mouth for a prosthesis, and the diagnosis and treatment of uncomplicated oral surgical procedures.

ORS 532. Principles of Surgery. LH-7; Total 11. This course presents didactic material relative to life maintenance, soft tissue management of traumatized patients, systemic surgical problems, and other considerations applicable to patients requiring surgery.

ORS 533. Oral Surgery II. LH-1; I; LH-2. II. Lecture and clinical course on the detailed principles and techniques of oral surgery. Oral surgical procedures will be discussed covering the full scope of the discipline in the office and hospital clinical assignments designed to improve the student's surgical skill, and diagnostic abilities will be made in the school clinical and hospital outpatient clinic.

ORS 549. Oral Surgery III. CI H-90 total. Clinical experience will be provided as an extern in the hospital oral surgery service for a full week. Additional clinical experiences will be had on one of several ambulatory clinics. Elective seminar sessions, designed to evaluate current concepts and to improve the student's diagnostic and clinical acumen will be offered to complement their clinical experiences.

Department of Orthodontics

Professor: McIver (Chairman)

Associate Professor: Kuftinec

Associate Clinical Professor: Hamer

Assistant Professor: Diaz

Assistant Clinical Professors: Brown; Cavedo;
Comer; Gills; LeHew; Williams

Guest Lecturer: Zechini

ORT 521. Orthodontics. LH-1; I. Lab H-1 I. PR: ANA 503. The laboratory during the first semester develops skill in manipulating the materials to construct orthodontic appliances. The design of appliances for specific malocclusions are demonstrated. The second semester deals primarily with facial and dental growth. Both normal and abnormal dentofacial development is included. Problems of developing dental occlusion are stressed and basic principles of orthodontic diagnosis is presented.

ORT 522. Orthodontics. LH-1. II. The course provides the student with fundamental knowledge in facial and dental growth in it's relation to orthodontic diagnosis and treatment planning. Basic diagnostic techniques and treatment procedures will also be emphasized.

ORT 533. Orthodontics. LH-7; total. I, LH-1. II. PR: ORT 521. Deals with the diagnosis and treatment of dental malocclusion. The material is presented to aid the student in acquiring judgment to differentiate between problems that are treatable by early or interceptive procedures and those that require more extensive therapy. The theories and methods of corrective orthodontics are surveyed. The clinical phase is for the diagnosis and treatment planning of orthodontic patients as well as for selective treatments.

ORT 549. Clinical Orthodontics. CI H-60. Total. PR: ORT 533. The clinical phase is a continuation of the D-3 year.

Department of Pedodontics

Associate Professor: Troutman (Chairman)

Assistant Professors: Bender; Mourino

Assistant Clinical Professors: Allen; Horwitz;
Shockett

Clinical Instructors: Masters; Navon

PED 522. Pediatric Dentistry II. LH-1; Lab H-3. II. PR: ANA 503. Introduction to forms; history taking and dental charting; pediatric radiography, oral diagnosis, and treatment planning; pediatric restorative dentistry and pulpal therapy; considerable emphasis on preventive techniques in pediatric dentistry.

PED 533. Pediatric Dentistry III. LH-2, I; LH-1. II. PR: PED 522. A survey of physical and mental growth and development of the child through adolescence; comprehensive oral diagnosis and treatment planning, emphasis is placed on diet and nutritional evaluation and preventive measures; pediatric oral surgery; treatment of injuries to the primary and permanent dentition; interceptive orthodontics; anomalies of the dentition; inpatient and outpatient care for pediatric dental patients; treatment of the handicapped and chronically ill child and adolescent.

PED 549. Clinical Pediatric Dentistry. CI H-270 total. Comprehensive experience in clinical pediatric dentistry emphasizing comprehensive diagnosis and treatment planning of restorative and interceptive orthodontic cases and the treatment of child adolescent patients with abnormal behavior, developmental disabilities, or chronic disease. This clinical course extends over a two and one-half year period and completion of this course is dependent upon the student's meeting the minimal clinical expectations of the department.

Department of Periodontics

Professor: Kennedy

Associate Professors: Ranney (Chairman);
Ormes

Associate Clinical Professors: Maynard; Wilson
 Assistant Professors: Allen; Dorfman; Key;
 Palcanis; Ziegler

Assistant Clinical Professors: Armistead; Bird;
 Blanchard; Clarke; Howe; Konikoff; Moss; Ragsdale;
 Singdahlsen; Woodruff
 Clinical Instructor: Drescher

PER 512. Anatomy, Physiology, and Pathology of the Periodontium in Health and Disease. (Dentistry and Dental Hygiene) LH-2. II. The goal of this portion of the didactic curriculum in periodontics is to provide the student an opportunity to acquire a knowledge and understanding of the biology and pathologic-physiology of the periodontium. The clinical, radiographic, and microscopic features of periodontal diseases are presented.

PER 521. Etiology and Epidemiology of Periodontal Disease. (Dentistry and Dental Hygiene) LH-2. I. The student is provided an opportunity to acquire present understanding of the etiology of periodontal disease and the role which bacterial, host, iatrogenic, etc., factors may play. The various indices used to assess periodontal disease and the epidemiologic characteristics of periodontal diseases are also presented.

PER 522. Diagnosis and Treatment Planning for Periodontal Therapy. LH-1. PR: PER 512 and 521. The student is provided with information on how to arrive at appropriate diagnoses of periodontal conditions, establish prognosis, and plan appropriate treatment for establishing and maintaining health of the periodontium.

PER 531. Periodontal Therapy. (Dentistry and Dental Hygiene) LH-2:I. PR: PER 512, 521 and 522. The entire scope of periodontal therapy is presented by means of lectures, demonstrations, self-instructional material, and outside reading. Emphasis is placed on that aspect of periodontics vital to the general practice of dentistry, the relation of periodontics to other areas of dentistry as well as the rationale and biologic principles underlying periodontal therapy.

PER 549. Clinical Periodontics. CI H-180. Total. The opportunity is provided during the junior and senior years to gain practical experience in treating patients with periodontal disease. Each student is expected to complete approximately five cases of varying severity.

Department of Removable Prosthodontics

Professor: Bell (Chairman)
 Associate Professor: Smith
 Assistant Professors: Crabtree; Finnegan;
 Mann; Tsao; Ward
 Assistant Clinical Professors: Eubank;
 Gayle; Rankin
 Clinical Instructor: Kessler

REP 522. Preclinical Complete Denture Prosthodontics. LH-1; Lab H-5. II. A lecture and laboratory course in the laboratory procedures involved in complete denture construction. The student accomplishes the steps involved in the construction of a complete maxillary and mandibular denture for a manikin patient.

REP 532. Partial Denture Prosthodontics. LH-1. II. PR: REP 535. A lecture and seminar course in which the basic concepts and technics related to the design and construction of removable partial dentures are reviewed and expanded upon. The clinical procedures of removable partial denture design, construction, delivery, and maintenance are presented. Controversial subjects are discussed and evaluated on the basis of the available research results.

REP 533. Complete Denture Prosthodontics. LH-1. I and II. PR: REP 522. A lecture course presenting the principles, procedures, and rationale involved in the diagnosis, treatment planning, treatment, and maintenance of patients requiring complete dentures.

REP 535. Preclinical Partial Denture Prosthodontics. LH-1; Lab H-5. I. The basic concepts and techniques related to the design and construction of removable partial dentures with extra-coronal clasp type direct retainers is presented by lecture and seminar. The laboratory portion of the course provides the student an opportunity to perform the steps required to produce a removable partial denture framework. Communication with the dental lab technician is presented.

REP 539. Clinical Complete Denture Prosthodontics CI H-90 total. In this course the student will make clinical application of the principles, techniques, and procedures involved in the treatment and maintenance of patients requiring and using various types of complete dentures. The student is expected to treat a specified number of complete denture patients during the clinical (junior and senior) years. Credit for the course will be given upon the satisfactory completion of the basic minimum expectations. The course may be completed in either the junior or senior year.

REP 549. Clinical Removable Partial Denture Prosthodontics. CI H-90 total or until completed. PR: REP 532. A clinical course in which the student will apply the dental arts and sciences in the examination, evaluation, treatment planning, prosthesis design, treatment, and maintenance of patients requiring removable partial denture service. The student is expected to treat a specific number of removable partial denture patients during the clinical (junior and senior) years. Credit for the course will be given in the senior year.

Department of Restorative Dentistry

Professors: Burke; Crockett; Fore;
 Modjeski
 Associate Professors: Wittrock (Chairman);
 Eshleman; Jones; Shepard
 Director, Division of Crown and
 Bridge-Prosthodontics: Eshleman
 Director, Division of Dental Materials: Modjeski
 Director, Division of Operative Dentistry:
 Crockett
 Associate Clinical Professor: Fitzhugh
 Assistant Professors: Douglas; Hudson;
 Lee; Moon; Reardon; White; Wilson

Assistant Clinical Professors: Beall; Covington;
Duff; Flippen; Huband; Hubbard;
Perkinson; Rogers; Steiner; Webb
Clinical Instructors: Jenkins; Mullins;
Overcash; Pendergrass; Redwine; Riley;
Wright

RED 301. Oral Histology and Embryology. (Dental Hygiene) LH-1. I. Study of embryologic development of the face and oral cavity with a brief review of the four fundamental tissues of the body that provides the foundation for study of oral histology. Microscopic study of hard and soft structures of the oral cavity, including teeth, periodontal apparatus, oral mucosa, and salivary glands. Concludes with a summary of tooth development and eruption.

RED 302. Dental Materials. (Dental Hygiene) LH-1, Lab H-3. II. A study of the composition, uses, preparation, and manipulation of materials used in restorative dentistry.

RED 311. Dental Morphology. (Dental Hygiene) LH-2, Lab H-9 total. I. A study of the form and function of the teeth and their related structures. Included are laboratory assignments in tooth identification.

RED 511. Dental Anatomy. LH-3; Lab H-3. I. A didactic and laboratory study of the morphology of the human dentition and its related structures. An introductory study of dental materials and occlusion.

RED 512. Restorative Dentistry I. LH-1; Lab H-1. II. A didactic and laboratory course dealing with caries and the design and insertion of single surface restorations. The dental materials pertinent to this course area also studied.

RED 514. Introduction to Principles of Occlusion. LH-1; Lab H-2. II. A didactic and laboratory course that introduces the various factors involved in the occlusion of natural teeth, the principles of an arrangement of optimum occlusion, and technical exercises to develop quadrants of posterior teeth to occlude in an optimum manner with an opposing natural dentition.

RED 523. Restorative Dentistry II. LH-2; Lab H-6. I, II. The didactic portion consists of theory and concepts related to prevention, diagnosis and treatment planning, and the restoration of the dentition. The laboratory phase provides experiences in the preparation and restoration of teeth and the fabrication of fixed prosthesis.

RED 533. Restorative Dentistry III. LH(1); I, II. The series of lectures will concentrate on more advanced diagnosis and treatment planning as related to restorative dentistry and to the entire scope of dentistry.

RED 549. Clinical Restorative Dentistry. CI H-360 total. The course includes clinical experiences in diagnosing, treatment planning, and the performance of restorative treatments on clinical patients.

Division of Occlusion

Associate Professors: Butler (Chairman); Bush
Assistant Professor: Abbott

OCC 513. Occlusion I. LH-1; Lab H-1; CI H-1. I, II. The goal of this course is to provide an understanding of the anatomy of the masticatory system, the border range of mandibular movement, terminology of occlusion, making of dental casts and articulation on a semi-adjustable articulator and static occlusal analysis.

OCC 521. Occlusion II. LH-1; Lab H-2. I. The goal of this course is to provide an understanding of the neurophysiology and kinesiology of mandibular movement; physiology of mastication and deglutition; determinants, philosophies, and pathology of occlusion; bruxism; jaw dysfunction syndrome; differences between natural and prosthetic dentition; construction of a bite-plane and occlusal adjustment.

OCC 522. Occlusion III. LH-; CI H-1. II. The goal of this course is to develop an understanding of the examination technique and management of occlusion problem patients including symptomatic therapy and sequencing of treatment.

Division of Team Programs

Waller (Director); Barron (D. A. U. Program Director)

Assistant Professors: Barron; Hardigan; Luton; Nash; Odom; Price; Schwartz; Smith; Waller
Clinical Instructors: Gardner; Gilliam; Hicks; Hutcheson; Sanford

DTP 522. Dental Auxiliary Utilization. LH-1. II. A study of the inter-relationships of the dentist, dental auxiliaries, and the control of dental practice. Special emphasis is placed on the utilization of a full-time, chairside dental assistant.

DTP 532. Management of Human Resources. LH-2. II. A study of behavioral concepts in management. Special attention is given to management styles, inter-personal relationships, auxiliary development, interviewing, and group dynamics as they apply to dental practice.

DTP 539. Dental Auxiliary Utilization Clinic. CI H-60 total. I, II. PR: DTP 522. A clinical application of didactic principles related to the utilization of a full-time, chairside dental-health team.

DTP 535. Office Management. LH-1. II. A study of the inter-relationships of the dentist, dental auxiliaries, and the management of an expanded duty dental practice. Special emphasis is placed on team scheduling and control of patient flow, desirable facility design, task analysis, and cost effectiveness relative to the management of available resources.

Division of Dental Hygiene

Associate Professor: Dinius (Director)

Assistant Professor: Baxter
Instructors: Logue; Stambaugh
Clinical Instructor: Jackson

DEH 301. Dental Hygiene I. LH-3, Lab H and CI H-7. I. The introduction to clinical knowledge and skills for the performance of dental hygiene services. Included is an introduction to professional ethics with a survey of the history of dentistry and dental hygiene and the various specialty areas of dentistry.

DEH 302. Dental Hygiene II. LH-3, Lab H-3, CI H-8. II. PR: DEH 301. Clinical performance of basic dental hygiene services. Included is didactic and clinical instruction in uses and techniques of dental radiology. Assignment in dental specialty areas is part of this course also and specific instruction is provided for introducing the student to basic principles of chairside dental assisting.

DEH 312. Community Dental Health I. LH-3. II. A course covering materials, methods, and principles of instruction in health education and communication with emphasis on oral health and the relationships to clinical and community oral hygiene. Instructional and communication skill building is included. Practical experience is provided and specific projects are assigned.

DEH 401. Dental Hygiene III. LH-2, CI H-20. I. PR: DEH 302. A continuation of clinical practice introducing advanced techniques for performance of dental hygiene procedures. Assignment in dental specialty areas is included, and experience with special needs patients is provided.

DEH 402. Dental Hygiene IV. LH-1, CI H-16. II. PR: DEH 401. A continuation of clinical performance emphasizing preparation for practice of clinical dental hygiene. Time is allotted for students to pursue individual projects related to clinical dental hygiene.

DEH 411. Community Dental Health II. LH-2. I. PR: DEH 312. An introduction to principles of public

health emphasizing the role of dentistry and dental hygiene. Included is the role of federal, state, and local governments in the delivery of health care. Field trips are arranged to augment the course material.

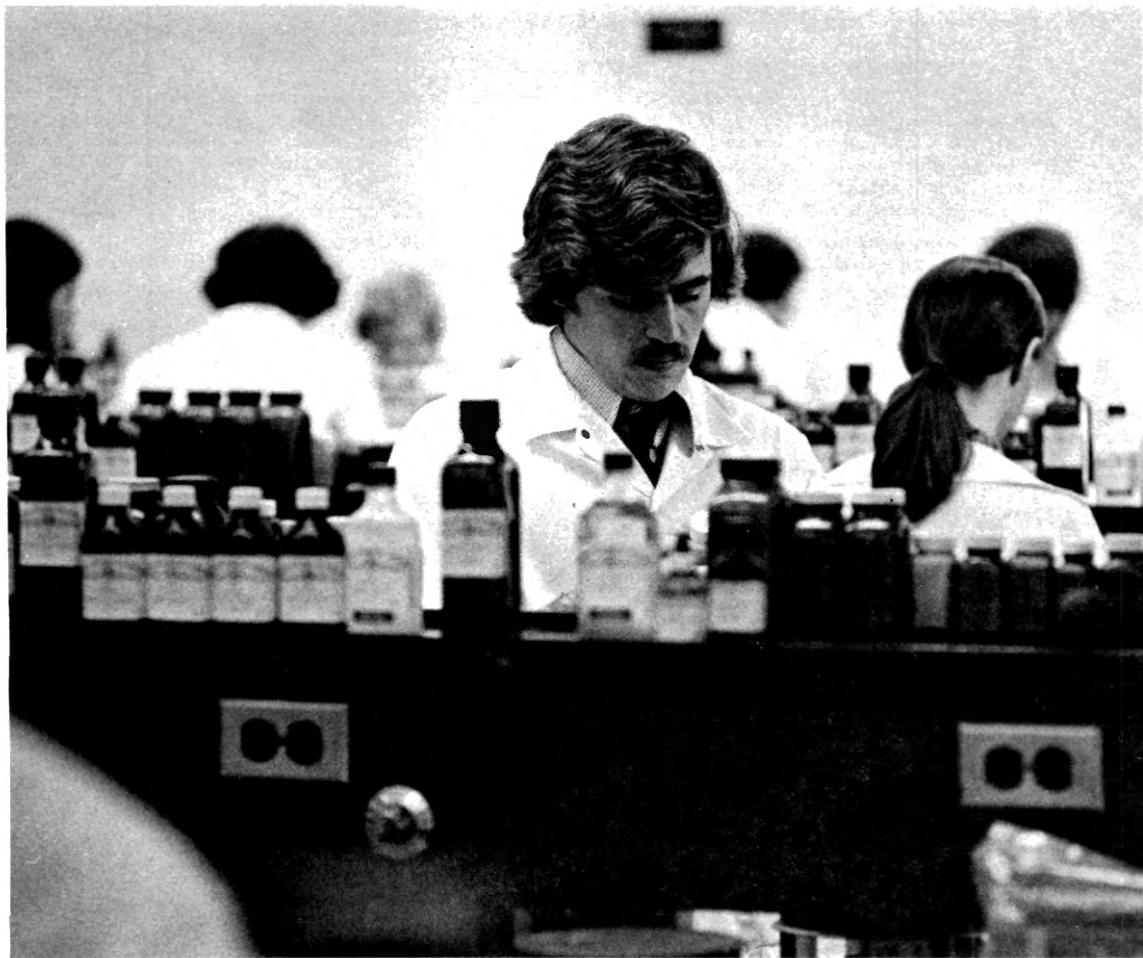
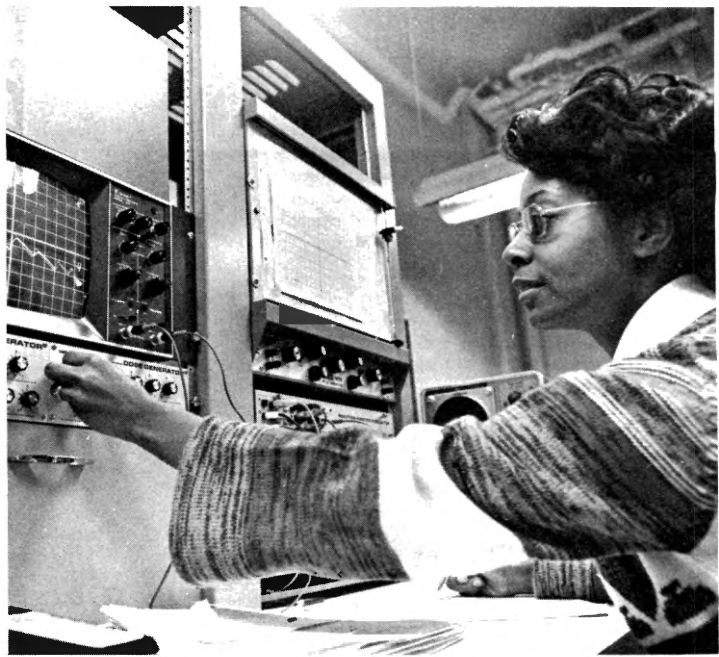
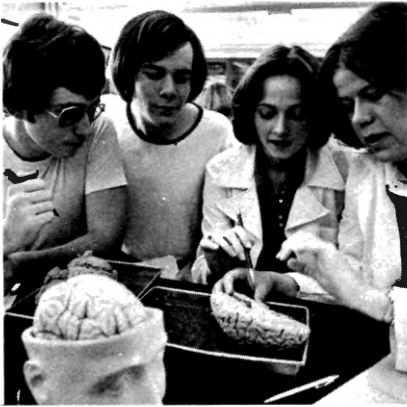
DEH 412. Community Dental Health III. CI H-8. II. PR: DEH 411. Practical application of principles of dental public health through supervised experience in the community.

DEH 422. Dental Hygiene Seminar I. LH-2. II. Ethics, jurisprudence, and principles of dental hygiene practice. Included is a study of state practice acts and examining boards, dental hygiene education curriculum development, dental team relationships, office management, and third party dental care systems.

DEH 432. Dental Hygiene Seminar II. LH-2. II. An This course is designed to help the dental hygiene student expand her/his skill in manipulating materials used in restorative dentistry. The concepts and fundamentals of simple restorative procedures will be presented in a lecture format utilizing handouts, slide presentations, video-tapes, and demonstrations followed by laboratory exercises. Particular emphasis will be placed on the restoration of cavity preparations in manikins using amalgam and composite resins. elective course designed to provide an introduction to expanded functions for dental hygienists. Experience in practical application is provided.

DEH 442. Dental Hygiene Seminar III. LH-2. II. Introduction to basic principles of clinical dental hygiene course development and of clinical supervision. Practical experience in clinical supervision of students is included.

Electives. Courses meeting specific needs and interests of students may be elected in the Schools of Dentistry, Basic Sciences, Business, and Arts and Sciences.



SCHOOL OF PHARMACY

ADMINISTRATIVE OFFICERS

Warren E. Weaver, B.S., Ph.D.
Dean

Graham C. Windridge, Pharm.D., Ph.D.
Assistant Dean

Kenneth Steiner, B.S., M.S.
Director of Continuing Education

HISTORY

When the Medical College of Virginia opened its doors on November 5, 1838, pharmacy was taught as a part of the medical course. Although the General Assembly of Virginia amended the charter in 1879 to permit MCV to confer the degree of graduate of pharmacy upon properly qualified individuals, college records indicate that there were two graduates in pharmacy as early as 1876.

The School of Pharmacy of MCV (now a division of Virginia Commonwealth University) was officially established in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. The two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work and a B.S. degree was awarded. In 1960 the program lengthened to the current five-year course leading to a Bachelor of Science in Pharmacy degree. In 1975, authority was granted to offer to selected students a six year program leading to the Doctor of Pharmacy degree.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Departments in the school currently direct work leading to the M.S. and Ph.D. degrees in pharmaceutical chemistry and pharmaceuticals, as well as the M.S. degree in hospital pharmacy.

In few states are pharmacists educated under better conditions than in Virginia. This is the only institution in the state offering work in pharmacy; and students in the schools of medicine, dentistry, pharmacy, nursing, and other health professions share alike in its teaching facilities. Since 1971, all senior pharmacy students have been participating in a clerkship program during their last semester. Students in the Baccalaureate program serve clerkships of approximately four weeks within the Medical College of Virginia Hospitals working directly with patients and their drug therapy programs, approximately eight weeks in a community pharmacy and a hospital pharmacy under the training and guidance of selected preceptors, and approximately four weeks in elective programs of their choice. Students in the Doctor of Pharmacy program participate in more extensive clerkships and in research projects to investigate methods for improving pharmaceutical services.

That the health professions are jointly responsible for delivery of health care is ample reason for their members being educated together. Emphasis upon the importance of this point of view is a distinguishing feature of the education offered to students. Supervision

of students in the hospitals is under the direction of the Department of Pharmacy and Pharmaceutics.

PHILOSOPHY

In developing the curriculum of the School of Pharmacy, the faculty recognizes that an educated man or woman should be prepared to assume a responsible and rewarding role in society. The program of education is designed to provide a sound, scientific, and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. The program of study includes as much of the arts and humanities as possible in order to provide the student with a broad educational base which will enable him to participate in community life, not only as a professional, but also as an informed, concerned citizen. Such courses also contribute to enrichment of the student's life by stimulating in him a greater appreciation of the cultural values and problems of our society.

Additionally, the program endeavors to orient the student to the problems and needs of urban life in our nation and in the Commonwealth of Virginia in particular.

OBJECTIVES

The primary objective of the School of Pharmacy is the education of young men and women who seek to enter health service work in one of the several areas of pharmaceutical practice.

The School of Pharmacy seeks to provide an environment in which sound teaching and learning are promoted and excellence in achievement in the classroom, laboratory, and clinical setting is stressed. The same ideals have been maintained in our clerkship program in extending the student's learning experiences off campus and into selected community and hospital pharmacies.

The School of Pharmacy is cognizant of its responsibility to add new knowledge in the pharmaceutical and related sciences and endeavors to do so by promoting and encouraging research and graduate education in these sciences.

An appreciation of professional ethics and the concept of service are stressed throughout the years of professional education.

The School of Pharmacy recognizes its responsibility to foster continuing education for practicing pharmacists and to offer programs for the benefit of such practitioners.

To obtain the primary objective, the School of Pharmacy strives to:

- A. Provide the necessary environment for the student to acquire a fundamental knowledge and understanding of the pharmaceutical and basic medical sciences and the essential skills related to the practice of pharmacy.
- B. Develop in the student attitudes of professional responsibility and concern toward his community, his fellow man, and colleagues in other health professions; and
- C. Establish in the student habits of and the desire for professional improvement through continued self-education and participation in formalized programs of continuing education.

CAREER OPPORTUNITIES

Everyone is familiar with the neighborhood or community pharmacy and has a general idea of how the pharmacist who is there serves his public. In many areas, pharmacies may be part of a large chain, or they may be owned and managed by independent practitioners. In some cases, pharmacies specialize only in prescription and other health-related needs. About nine out of every 10 pharmacists practicing in America serve in some capacity in community pharmacy.

One of the most rapidly growing areas of pharmaceutical practice is institutional or hospital pharmacy. Almost all major hospitals have one or more full-time pharmacists, and in most cases every hospital has a consulting pharmacist. With the great emphasis on institutional medicine, the demands for pharmacists in this area of practice have grown tremendously in the past few years.

Other pharmacists serve as medical service representatives who call on physicians for major pharmaceutical manufacturers. An additional group of pharmacists is involved in manufacturing operations and in research activities associated with the production of pharmaceutical products. Opportunities are also available in various government services, including the Public Health Service and Veterans Administration, as well as in government-operated laboratories.

In most cases, those who engage in independent research or in teaching seek graduate degrees in specialty fields related to pharmacy.

FUTURE PLANS

The School of Pharmacy recognizes two major situations that affect the delivery of adequate pharmaceutical services to the citizens of the Commonwealth of Virginia. In the first instance, the ratio of pharmacists to the population of Virginia is the lowest of all states in the southeast region. Secondly, the role of the pharmacist is progressing rapidly toward a patient-oriented service as a member of the total health care team.

In order to educate and to train a sufficient number of pharmacists to deliver modern pharmaceutical service, now and in the future, plans call for a new pharmacy building and additional faculty. Furthermore, the curriculum is under continual surveillance and is designed to provide well-trained pharmacists who can function in a clinical environment.

The future needs of pharmacists for a readily available and broad continuing education service is recognized. Resources and facilities of the institution presently supporting this activity are being expanded and made available to an increasing number of pharmacists and other health professionals. A drug information center has been established for the purpose of providing authoritative information on drug therapy.

The School of Pharmacy continues its efforts to enroll academically qualified men and women through recruitment at all two-year and four-year colleges in Virginia. Particular emphasis is given to the enrollment of students from minority groups.

FACILITIES

The principal departments of the School of Pharmacy are in McGuire Hall and McGuire Hall Annex located at Twelfth and Clay Streets. McGuire Hall was built in 1912 by the University College of Medicine and the annex was built in two phases; the first completed in 1955 and the second in 1958. In addition, a nutriceutic laboratory is located on the roof of the first annex and houses research activities in pharmacognosy. This laboratory was built by the American Tobacco Company and donated in 1968 to the school.

Classes for students in pharmacy are also conducted in Sanger Hall, located between Eleventh and Twelfth Streets on East Marshall Street. This building houses several basic science departments and the administrative offices for the MCV Campus of Virginia Commonwealth University. The principal areas occupied by the hospital pharmacy are lo-

cated in the A. D. Williams Memorial Clinic at Twelfth and Marshall Streets and in the North Hospital at Thirteenth and Marshall Streets. Students receive clinical experience in the MCV Hospitals. Other facilities available for teaching include area hospitals and pharmacies throughout Virginia. The major library holdings are in the Tompkins-McCaw Library at Twelfth and Clay Streets.

ACCREDITATION

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education and is a member of the American Association of Colleges of Pharmacy.

PROGRAMS

Undergraduate. The degrees, Bachelor of Science in Pharmacy (B.S. Pharm.) and Doctor of Pharmacy (Pharm.D.) are conferred upon any student who complies with all the academic requirements and university regulations concerning degrees and is approved by the faculty of the School of Pharmacy.

Graduate. Departments in the school offer programs of graduate study leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Students may specialize in biopharmaceutics, pharmaceutical chemistry, and product development.

Interested students with graduate study potential should consult with the appropriate department chairman or the dean of the School of Basic Sciences. Information on procedures and policies for graduate studies are given on pages 132-138.

LICENSING AND RECIPROCITY

The Virginia Board of Pharmacy holds two meetings for examination each year, in November and in June. Applicants for examination as licensed pharmacists must present evidence that their first professional degree was granted by a school of pharmacy recognized by the board. This school is among those recognized.

To be licensed as a pharmacist in Virginia, an applicant must present to the Virginia Board of Pharmacy evidence of six months of satisfactory experience in pharmacy under the direct supervision of a pharmacist, three months of which is gained by completion of the third professional year clerkship program.

Experience is not a requirement for graduation in pharmacy from Virginia Commonwealth University.

A student who intends to qualify for reciprocity must, at the time of licensure in Virginia, present to the Virginia Board of Pharmacy evidence of nine months of satisfactory experience under the direct supervision of a pharmacist. License by reciprocity is available in every state of the United States except California, Florida, and Hawaii.

Those students who intend to be licensed in Virginia should contact the Virginia Board of Pharmacy, Suite 209, 10 South 10th Street, Richmond, Virginia 23219.

ADMISSION REQUIREMENTS

A. The Bachelor of Science in Pharmacy degree is based upon satisfactory completion of five academic years in college. Candidates for admission to the School of Pharmacy must attend an accredited college for two academic years (six quarters or four semesters) prior to admission. To receive a degree in pharmacy, a minimum of three academic years' residence is required in the School of Pharmacy even if the student has attended College elsewhere for more than two academic years.

B. A statement of good moral character signed by one or more pharmacists, physicians, or former teachers may be requested by the Admissions Committee.

C. An official high school transcript and official transcripts from all colleges previously attended are required. Applications are considered by the Admissions Committee only when transcripts showing completion of three semesters or four quarters of work have been received. Acceptances are offered contingent upon completion of specific work that may be in progress, if all other aspects of the application are satisfactory.

D. Academic Prerequisites. Applicants must offer credits in the following subject areas:

	Semester Hours	Quarter Hours
Biology (botany and zoology).....	8*	12*
General Chemistry.....	8*	12*
Physics	8*	12*
English.....	6	9
Mathematics**.....	6*	9*
Economics	3*	4.5*
Electives***	24	36
TOTAL.....	63	94.5

E. Applicants must have earned a creditable average ("C" or better) overall or in the courses specified to meet minimum academic requirements for admission.

F. Applicants for admission must furnish a photograph and a completed application form; this form requires that the names of four individuals be given, including at least two teachers (preferably in the sciences) qualified to give an estimate of the applicant's ability for carrying out the work in pharmacy. These reports must recommend the applicant for admission.

G. The dean and the committee on admissions may require a personal interview with the applicant.

H. Applicants are urged to take the Pharmacy College Admission Test in the fall or winter preceding admission.

I. Students are admitted in September only. Applications should be submitted in the winter preceding admission.

J. Students planning to enter an accredited college on high school graduation should plan their high school programs to meet the requirements for admission in the college where they will take the prerequisite work for admission to pharmacy. High school programs rich in mathematics and the sciences are excellent preparation for the study of pharmacy.

*Additional hours in these specific subjects may be credited as prerequisites to admission; no less than 18 semester hours of electives must be offered and total credits must be 63 semester hours.

**College-Level algebra and trigonometry represent the minimum level acceptable. Students qualifying for higher level mathematics upon entrance are expected to offer a minimum of six semester hours credit in mathematics, and applicants are urged to complete the equivalent of at least one semester of calculus.

***Humanities, social sciences, and liberal arts work are creditable to this area. Physical education is not creditable. In general, courses that are non-science or in the non-business area meet the requirements for elective credit.

K. Further information and application materials are obtained by writing:

Chairman, Admissions Committee
School of Pharmacy
Medical College of Virginia
Virginia Commonwealth University
MCV Station, Box 666
Richmond, Virginia 23298

L. Information concerning the admission requirements of the Pharm.D. program may be obtained by writing to the Chairman, Pharm.D. Admissions Committee, at the above address.

CURRICULUM

FIRST PROFESSIONAL YEAR (THIRD COLLEGE YEAR)

FIRST SEMESTER	Semester Hours
PHC 301.....	5
PHC 311.....	5
PHA 301.....	5.5
PHA 321.....	2
	<hr/> 17.5

SECOND SEMESTER

ANA 302.....	4.5
BIC 302.....	5.5
PHC 302.....	3
PHA 302.....	5.5
	<hr/> 18.5

SECOND PROFESSIONAL YEAR (FOURTH COLLEGE YEAR)

FIRST SEMESTER	
PHA 431.....	3
PHA 401.....	4.5
PHA 411.....	2
PHA 421.....	3
PIO 401.....	5.5
	<hr/> 18

SECOND SEMESTER

PHC 402.....	3
MIC 402.....	4.5
PMC 402.....	4
PHA 412.....	2
PHA 432.....	4
	<hr/> 17.5

THIRD PROFESSIONAL YEAR (FIFTH COLLEGE YEAR)

B.S. PROGRAM

FIRST SEMESTER

PHC 503.....	3
PMC 501.....	3
*PHA 501 or.....	4
*PHA 552.....	3
PHA 511.....	5
Elective.....	2-4
	<hr/> 16-19

SECOND SEMESTER

**PHA 512.....	15
(Professional Practice Clerkships)	

PHARM.D. PROGRAM

FIRST SEMESTER

PHA 503.....	3
PMC 501.....	3
PHA 511.....	5
PHA 551.....	4
PHA 633.....	3
	<hr/> 18

SECOND SEMESTER

PHA 562.....	3
PHA 622.....	3
PHA 636.....	6
Electives.....	6
	<hr/> 18

SUMMER

PHA 640.....	8
PHA 690.....	2
	<hr/> 10

FOURTH PROFESSIONAL YEAR (SIXTH COLLEGE YEAR)

FIRST SEMESTER

PHA 501 or.....	4
PHA 552.....	3
PHA 637.....	2

*Options: Students may elect to take PHA 501 or PHA 552. An additional elective is also required in the first semester, senior year.

**In some instances students in the final professional year may be obliged to travel and reside some distance from Richmond as part of the program. No refund of payments for tuition, fees, or other purposes may be expected by the students in this event, if credit is granted for time spent in this phase of the program. No stipends may be earned by the students in connection with any professional practice program for which the school grants credit.

PHA 640.....	10
Elective.....	3

18-19

SECOND SEMESTER

PHA 638.....	2
PHA 640.....	10
PHA 690.....	2
Elective.....	3

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ACADEMIC REGULATIONS

Matriculation in the School of Pharmacy implies a willingness on the part of the student to comply with university rules and regulations and to conduct himself in a manner befitting members of the profession he seeks to enter. The program of study and regulations regarding courses of study, student conduct, and the like are subject to modification without notice. All rules and regulations set forth in this bulletin, as well as other statements issued by administrative officers of the university, apply until further notice.

Probation. Students may be placed on probation by either the Committee on Admissions or the Committee on Promotions. Probation is a notice that the student's scholarship should improve to a level considered to be satisfactory by the faculty. Students are also placed on probation if two deficiencies are incurred in the work of any semester, including both progress and final grades. Students who fail to meet probationary requirements may expect to have their normal progress through school interrupted through attendance at summer school, repeating a year, or being asked to withdraw. Students on probation are not eligible to be nominated for offices in the student government nor to represent the school in athletics or other extracurricular activities. Students on probation are expected to stop or drastically curtail any outside employment. Detailed regulations on probation are sent to all students on probation and are available on request.

Outside Work. Students who complete an academic year and are ranked in the lower half of a class may expect to receive a notice from the faculty that outside work should be curtailed or eliminated. In general, the faculty believes that students should give first priority to their school work. Students able to maintain academic standing are not restricted with respect to outside employment.

Honor Code. All students are expected to be governed by the honor code and regulations of the Student Body organization. A detailed description of the Honor Council's rules of procedure is available upon request.

FACULTY ADVISING PROGRAM

One faculty advisor is appointed by the dean for each class in the three professional years of the Bachelor of Science program. Each student in the last two years of the Pharm.D. program has a faculty advisor.

There is a faculty advisor to the Inter-Fraternity Council, as well as an advisor for each of the professional pharmacy fraternities.

Each of the student chapters of professional pharmacy organizations on campus operates with a faculty advisor.

ATTENDANCE REGULATIONS

1. The faculty considers attendance at lectures, laboratories, and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional pharmacist. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience.

2. If a student is absent for unavoidable reasons, he should report this absence to the dean's office within 24 hours after returning to class. Failure to report within the 24-hour period is considered an unexcused absence. The absent student is expected to make up all work which is missed.

3. At the start of each course, the instructor will relate to the class the policy of his department concerning the attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

4. Unexcused absences exceeding one per semester hour will allow the instructor to reduce the earned grade by one level. Further grade reductions at the same rate may be made for succeeding blocks of unexcused absences.

PROMOTION

Attending a pharmacy school is not a right acquired by conforming with the entrance requirements and paying the tuition fees. Tuition fees do not pay for a pharmaceutical education, since part of the cost comes from the state and other sources. It is, therefore, a priv-

ilege granted to certain persons that they may be pharmacists for the future. The persons to whom this privilege should be granted are, naturally, those who will make the best pharmacists. It is for this reason that the dean and Committee on Promotions, which is made up of the students' instructors of the year, usually request a student who fails to do satisfactory work to withdraw. The most careful consideration is given not only to the student's grades but also his probity, his industry, his mental ability, and his inclinations, in admitting him to the school and advancing him to a higher class, as well as in requesting him to withdraw from the school. The following guidelines are used by the committee on promotions.

1. Students who have passed the work of an academic year in a satisfactory manner will be advanced to the next higher class, provided there are no other reasons that make this undesirable.

2. A quality point average of 2.0 or better usually merits promotion if a student has no deficiencies. Students with deficiencies may be permitted to attend summer school or in some instances may be required to repeat at least a portion of a year's work.

3. A student with course deficiencies cannot enter the final year of the program.

4. Students who fail to pass two or more subjects ordinarily are not continued in enrollment, except under unusual circumstances.

5. Students who fail to meet conditions of probation or who have not achieved a satisfactory average may be asked to withdraw or repeat a year's work.

These are not absolute rules, but are, rather, guidelines to show the student what action may be taken in a particular case. The dean and the Committee on Promotions remain entirely free to pass upon each case according to its merits.

Criteria for promotion and graduation in the Pharm.D. program are available from the School of Pharmacy.

GRADUATION

All students recommended for the degree of Bachelor of Science in Pharmacy must be approved by the faculty of the School of Pharmacy. In order to be recommended the following requirements must be met:

1. The candidate must be of good moral character.

2. He must have completed satisfactorily all the required work.

3. He must have paid all fees.

4. The last year's work for the degree must be done in residence in this school.

5. He must be present at the commencement exercises unless excused by the dean in writing.

HONORS, AWARDS, AND ORGANIZATIONS

Rho Chi. This national honorary pharmaceutical society established Lambda Chapter at MCV in 1929. Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the society is based on high attainment in scholarship, character, personality, and leadership. Candidates for membership are first eligible for consideration during the second professional year of the pharmacy program.

Lambda Chapter annually awards certificates in recognition of outstanding scholarship to students who have completed the pre-pharmacy and first professional year pharmacy curriculum. Also, Lambda Chapter selects one member of the senior class who is recognized for excellence in scholarship, leadership, personality, and character. The name is inscribed on a plaque placed in the School of Pharmacy.

A. D. Williams Awards. One student in each of the first three professional years in pharmacy receives an A. D. Williams Scholarship Award, based upon having the highest academic achievement in the class. The award consists of \$150 plus an engraved certificate.

Virginia Pharmaceutical Association Scholarship Awards. The Virginia Pharmaceutical Association, wishing to encourage scholarship of high order among students of pharmacy, has established three scholarship awards. The first, for \$100 and known as the Wortley F. Rudd Award, is presented to the student with the highest overall average. The second, for \$50 and known as the William G. Crockett Award, is presented to the senior student who earns the highest average in pharmacy courses. The third, for \$50 and known as the Frank P. Pitts Award, is presented to the senior student who earns the highest average in chemistry courses. The names of the recipients are published in the commencement program and the awards are presented at the

annual meeting of the Virginia Pharmaceutical Association.

The Merck Award. An award, consisting of the current editions of *The Merck Index* and *The Merck Manual*, is presented to a graduating senior. The award is based on the highest grade point average improvement for the first three professional pharmacy years. One award is presented for each 50 graduates.

The Upjohn Award. A public service achievement award consisting of a plaque and a \$50 stipend is given to the graduating senior who has demonstrated excellence in the type and amount of public service projects participated in while enrolled as a student in the School of Pharmacy.

Student American and Virginia Pharmaceutical Association. Students in the School of Pharmacy have an opportunity to become members of this national and state-affiliated organization. The group meets regularly, presenting programs of interest to the student body.

Student Chapter Virginia Society of Hospital Pharmacists. Pharmacy students who are interested in the practice of hospital pharmacy may become members.

Professional Fraternities. Chapters of Phi Delta Chi, Kappa Psi, and Kappa Epsilon are active within the student body. These fraternities extend invitations, according to the rules of the Interfraternity Council, to pharmacy students to become members. Eligibility for consideration is based upon academic achievement as determined by the Interfraternity Council and the dean's office.

FINANCIAL AID

For information on financial aid, see page 11.

COURSES OF INSTRUCTION

Department of Pharmaceutical Chemistry

Professors: Smith (Acting Chairman); Andrako; Richard; Stubbins; Weaver

Associate Professors: Boots; Van't Riet

Assistant Professors: Glennon; Rogers;

Windridge

Instructor: Harvie

PHC 301. Organic Pharmaceutical Chemistry. LH-3; Lab H-4; SH-5. I. A study of the chemical and physical properties of aliphatic and aromatic compounds. Fundamental theories and reactions are covered with emphasis on those areas which serve as a basis for organic pharmaceutical chemistry and biochemistry. The laboratory work involves an examination of the physical properties and reactions of functional groups commonly found in medicinal agents.

PHC 302. Organic Pharmaceutical Chemistry. LH-3; SH-3. II. PR: PHC 301. A continuation of PHC 301.

PHC 311. Pharmaceutical Analysis. LH-3; Lab H-4; SH-5. I. The theory and application of equilibria involved in solubility, acid-base, and redox systems and absorption of radiation in assay methods of pharmaceutical interest. Both classical and instrumental methods are used for drug analysis in the laboratory.

PHC 402. Organic Pharmaceutical Chemistry. LH-3; SH-3. II. PR: PHC 302. A study of synthetic and natural organic compounds of medicinal and pharmaceutical interest with emphasis being placed on physical and chemical properties and on the relationships between chemical structure and pharmacological activity.

PHC 503. Organic Pharmaceutical Chemistry. LH-3; SH-3. I. PR: PHC 402. A continuation of PHC 402.

PHC 506. Advanced Medicinal Chemistry I. LH-3; SH-3. II. PR: PHC 503. A study of pharmacodynamics, theories relating to drug action, and the general principles of drug design.

PHC 511. Physical Chemistry. LH-3; SH-3. I. CR: calculus. A first course in physical chemistry with emphasis on those topics most relevant to the health sciences, including electrolyte solution theory, kinetics, and the physical chemistry of macromolecules.

PHC 512. Physical Chemistry. LH-3; SH-3. II. PR: PHC 511. A continuation of PHC 511.

PHC 513. Experimental Physical Chemistry. Lab H-4; SH-2. I. CR: PHC 511. The laboratory work includes a number of basic experiments in physical chemistry along with techniques and procedures of special interest to students in the health sciences.

PHC 514. Experimental Physical Chemistry. Lab H-4; SH-2. II. PR: PHC 513. CR: PHC 512. A continuation of PHC 513.

PHC 521. Drug Assaying. LH-2; Lab H-4; SH-4. I. A consideration of the chemical assaying of U.S.P. and N.F. preparations, including synthetic and naturally occurring drugs.

PHC 526. Research Techniques in Pharmaceutical Chemistry. LH-0-2; Lab H-2-8; SH-1-4. II. The theory and application of classical and instrumental techniques used in pharmaceutical research are presented.

PHC 590. Pharmaceutical Chemistry Seminar. LH-1; SH-1. I, II. In addition to reports that are presented by students, staff, and visiting lecturers, current problems and developments in pharmaceutical chemistry are discussed.

PHC 607. Advanced Medicinal Chemistry II. LH-3; SH-3. I. PR: PHC 506. A study of the structure-activity relationships and mode of action of selected group of drugs.

PHC 622. Stereochemistry. LH-2; SH-2. II. A study of the number and kinds of stereoisomers of organic compounds, the differences in chemical and physical properties between stereoisomers.

PHC 632. Heterocyclic Chemistry. LH-3; SH-3. II. A series of lectures covering a number of the more important heterocyclic systems.

PHC 650. Special Topics in Pharmaceutical Chemistry. LH-1-4; SH-1-4. I, II. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as a part of the research training.

PHC 681. The Ultracentrifuge. LH-2; SH-2. I. The optical systems of the ultracentrifuge are discussed, as well as the applications of the ultracentrifuge in the study of the properties of macromolecules such as proteins and nucleic acids.

PHC 690. Research in Pharmaceutical Chemistry. SH-1-15. I, II. Research leading to the M.S. or Ph.D. degree.

Other graduate courses suitable for credit towards an advanced degree are listed in the *Arts and Sciences Graduate Bulletin*, Chemistry Section, published by VCU's Academic Campus.

Department of Pharmacy and Pharmaceutics

Professors: Barr (Chairman); Lowenthal; Stepka; Wood

Emeritus Professor: Neuroth

Associate Professors: Fiske; Garrettson; Harrison; Salter; Smith; White

Assistant Professors: Cessna; Hirsch; McKenney; Myers; Reinders; Steiner

Assistant Clinical Professor: Paiva

Instructor: Watkins

Clinical Instructors: Akers; Anderson; Belcher; Berryman; Blanton; Brown, E.; Brown, R.; Cosnotti; Crickenberger; Dame; Davis; Dietrich; Edloe; Fox; Glascock; Guynn; Hancock; Harrell; Hasty; Holzbach; Jeter; Johnston; Kahn; Kincaid; Kittinger; Marshall, D.; Marshall, F.; Marshall, T.; Martell; Meltzer; Metz; Mink; Moore, A.; Moore, J.; Morgan; Muha; Painter; Riffie; Robertson; Showalter; Smith; Stapleton; Stephenson; Sturgill; Swartz; Thacker; Thomas; Title; Vaughan; Windmuller; White; Young

PHA 301-2. Principles of Pharmacy. LH-4; Lab H-3; SH-11. I and II. A study of the chemical, physicochemical, and biopharmaceutical principles fundamental to the development and use of medication dosage forms. Pharmaceutical calculations and technology required to compound and dispense dosage forms for prescription orders are presented. Includes discussion of metrology, kinetics, theory of solutions, powdered systems, colloid systems, suspensions, emulsions, and aerosols.

PHA 321. Drugs in Society. LH-2; SH-2. I. An introduction to the role of drugs in society with particular emphasis placed on the importance of the pharmacist as a knowledgeable drug expert. The areas of drug abuse

in present and past societies, present health problems, and patient self-medication are discussed as examples. The role of the pharmacist in promoting rational drug therapy is emphasized.

PHA 401. Principles of Pharmacy. LH-3; Lab H-3; SH-4.5. I. PR: PHA 302. The course is a continuation of PHA 301-2. The physio-chemical, pharmaceutical, and biopharmaceutical principles underlying the compounding and use of dermatological products, suppositories, powders, granules, capsules, and tablets are presented. The application of statistical procedures and computer technology to pharmacy is discussed.

PHA 411. Elements of Physical Chemistry. LH-2; SH-2. I. PR: PHA 302. The course includes topics of physical chemistry that are not included in PHA 301-2 and 401. Data representation, calculus, thermodynamics, chemical equilibrium, and chemical kinetics are considered for pharmaceutical dosage forms and pure drugs.

PHA 412. Biopharmaceutics and Pharmacokinetics. LH-2; SH-2. II. PR: PHA 411. The general kinetics of drug absorption, distribution, and elimination are discussed in detail. The principles are applied to examine the role of the dosage form on the rate and extent of absorption. Physiological factors affecting biologic disposition of drugs are characterized by pharmacokinetics.

PHA 421. Principles of Law—Pharmacy and Drug Laws. LH-3; SH-3. I. A consideration of law as it affects the practice of pharmacy, including a study of state and federal laws that relate to drugs.

PHA 431. Pharmacognosy. LH-2; Lab H-2; SH-3. I. A study of drugs derived from vegetable and animal sources, with emphasis on the biological activity and chemical nature of the active constituents.

PHA 432. Orientation to Disease States. LH-4; SH-4. II. A discussion of the pathology, clinical manifestations of prevalent diseases, and the course of disease processes.

PHA 501. Pharmacy Administration. LH-4; SH-4. I. A study of marketing as related to the drug industry and pharmacy. Techniques involved in establishing and maintaining a practice of pharmacy. Elements of accounting adapted to the needs of the pharmacist are included in the discussion.

PHA 511. Professional Practice. LH-3; Lab H-4; SH-5. I. Clinical pharmacology, clinical chemistry (laboratory tests), and social aspects of health care are discussed. Clinical conferences and assigned reading cover therapeutic topics in the medical and pharmaceutical literature. Interdisciplinary patient care is stressed by participation in hospital ward rounds.

PHA 512. Professional Practice. SH-15. II. The course is divided into four clerkship periods in which students participate in interdisciplinary patient care in the teaching institution and practice situations in community and hospital pharmacies. Emphasis is placed on the team approach to health care. Included are student-patient interviews, rational drug therapy, drug in-

teractions and adverse effects, and drug information retrieval.

PHA 531. Pharmaceutical Product Development. LH-2; Lab H-4; SH-4. I. A study of the pharmaceutical, physico-chemical, biopharmaceutical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms for hospitals and industry.

PHA 532. Pharmaceutical Product Development. LH-2; Lab H-4; SH-4. II. A continuation of PHA 531.

PHA 533. Non-Prescription Medication. LH-2; SH-2. I. The pathological and clinical manifestations of disease states that lead to self medication are discussed. Stress is placed on critical evaluation and rational use of non-prescription drug products promoted for patient selection and self medication.

PHA 541. Pharmaceutical Ethics. LH-2; SH-2. II. A study of the current practice and philosophy of pharmacy.

PHA 551. Applied Biostatistics and Drug Literature Evaluation. LH-3; Lab H-2; SH-4. I. The student is taught to retrieve and evaluate the validity of published studies, and to apply principles of biostatistics in the design and evaluation of clinical drug research studies.

PHA 552. Hospital Pharmacy Administration. LH-3; SH-3. I. An introductory course dealing with hospital pharmacy administration. Subject matter includes the responsibilities, services provided, systems, methodologies, and administrative principles used by pharmacists to coordinate and to direct hospital pharmacy operations.

PHA 562. Application of Laboratory Values for Drug Therapy. LH-2; Lab H-2; SH-3. II. The utilization of laboratory values as a part of the total evaluation of the patient with respect to drug therapy selection, consultation, and management.

PHA 571. Undergraduate Research. Lab H-6; SH-3. I, II. Elective for selected students in the several areas of pharmaceutical sciences. (Graded pass or fail).

PHA 590. Pharmacy Seminar. LH-1; SH-1. I, II. Required of all graduate students in pharmacy.

PHA 601. Advanced Pharmaceutical Product Development. LH-3; Lab H-4-10; SH-5-8. I. An advanced study of the pharmaceutical, physicochemical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms.

PHA 602. Advanced Pharmaceutical Product Development. LH-3; Lab H-4-10; SH-5-8. II. A continuation of PHA 601.

PHA 605. Legal Aspects of Drug Development and Evaluation. LH-3; SH-3. I. A study of the requirements of the regulatory agencies in the development of a "new drug" in accordance with the IND and NDA process through all phases of laboratory and clinical testing, including pertinent statistics. The current and probable future requirements of "good manufacturing practice" will be treated.

PHA 608. Clinical Radiopharmacy. LH-1; Lab H-2; SH-2. II. Students receive training in the safe use, preparation, calibration, quality control, and clinical diagnostic use of current and investigational radiopharmaceuticals in nuclear medicine practice. Emphasis will be placed on obtaining patient medication histories for the evaluation of agents capable of in vivo and in vitro radioisotopic test modification.

PHA 611. Advanced Physical Pharmacy. LH-3; Lab H-0-4; SH-3-5. I. Detailed application of physicochemical principles to areas of pharmaceutical interest, including colloids, rheology, phase rule, complexation, kinetics, drug stability, and micromeritics.

PHA 612. Advanced Physical Pharmacy. LH-3; Lab H-0-4; SH-3-5. II. A continuation of PHA 611.

PHA 621. Advanced Biopharmaceutics. LH-2; SH-2. I. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination, and pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

PHA 622. Clinical Pharmacokinetics. LH-2; Lab H-0-2; SH-2-3. II. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction.

PHA 624. Pharmacokinetics. LH-2; SH-2. II. An advanced treatment of the kinetics of drug absorption, distribution and elimination utilizing mathematical models, analog, and digital computers for analysis of linear and non-linear biologic systems.

PHA 625. Biopharmaceutic Assay. LH-2; Lab H-2-6; SH-3-5. I. Theory and laboratory practice for systematic quantitative and qualitative analysis of drugs and metabolites in body fluids and tissues. Emphasis is on modern analytical methodology used in pharmacokinetic and biopharmaceutic studies. (Joint offering with the Department of Pharmaceutical Chemistry.)

PHA 626. Biopharmaceutic Assay. LH-2; Lab H-6-10; SH-5-7. II. A continuation of PHA 625 with particular emphasis on the identification of drug metabolites.

PHA 631. Advanced Hospital Pharmacy Management. LH-3; SH-3. I. An in depth study of contemporary hospital pharmacy problems and practice. Case studies in hospitals will be used for illustration.

PHA 632. Advanced Hospital Pharmacy Management. LH-3; SH-3. II. The subject matter discussed is an extension of PHA 631 with stress placed upon managerial abilities in handling various levels of personnel in the hospital.

PHA 633. Adverse Drug Reactions. LH-2; Lab H-2; SH-3. I. Epidemiology and etiology of drug-related, iatrogenic diseases are discussed. Detection, clinical evaluation, and appropriate management as well as methodology

for the prevention of adverse drug reactions are emphasized. Students are required to participate in group discussions and give presentations based on current literature. Students receive clinical exposure to the detection, evaluation, and management of drug induced diseases.

PHA 636. Advanced Clinical Pharmacy. LH-4; Lab H-4; SH-6. II. PR: 511. The rational choice of drugs with respect to disease conditions is discussed. Emphasis is placed on clinical differences between drugs. Clinical application of biopharmaceutics, pharmacokinetics, therapeutic effectiveness, drug interactions, and adverse effects are stressed. Students make case presentations to illustrate drug therapy in disease states.

PHA 637. Advanced Clinical Pharmacy. LH-2; SH-2. I. A continuation of PHA 636.

PHA 638. Advanced Clinical Pharmacy. Lab H-4; SH-2. I. A continuation of PHA 636, 637.

PHA 640. Advanced Clinical Practice. SH-8-10. I, II, and S. A series of elective and required planned experiences to permit Pharm.D. students to utilize their knowledge of the pharmaceutical sciences in a variety

of practice settings including general medicine wards, ambulatory clinics, clinical pharmacokinetics service, drug information service, radiopharmacy practice, and institutional pharmacy management. A total of 28 semester hours is required for Pharm.D. candidates.

PHA 650. Special Topics in Pharmacy. LH-1-4; SH-1-4. I. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

PHA 690. Research in Pharmacy. SH-1-15. Research leading to the M.S., Pharm.D., or Ph.D. degree.

BASIC SCIENCES-Basic science courses are included in the pharmacy curriculum. For details on the following courses and faculty, see the indicated pages.

ANA 302	See page 87.
BIC 302	See page 88.
MIC 402	See page 91.
PMC 402, 501	See page 92.
PIO 401	See page 93.



SCHOOL OF NURSING

ADMINISTRATIVE OFFICERS

Doris B. Yingling, R.N., B.S., M.A., Ed.D.

Dean

Katherine C. Bobbitt, R.N., B.S., M.S.

Assistant Dean, Undergraduate Program

Eleanor C. Repp, R.N., B.S., M.S.N., Ed.D.

Assistant Dean, Graduate Program

Shirley T. Downs, B.S., M.Ed.

Assistant Dean for Management and Student Affairs

Betty H. Gwaltney, B.S., B.S.N., M.A.

Director, Continuing Education

HISTORY

The School of Nursing originated in 1893 when the University College of Medicine (UCM) opened a two-year training school for nurses in its Virginia Hospital. In 1895, the Medical College of Virginia inaugurated its school of nursing when Miss Sadie Heath Cabaniss established a two-year training school for nurses in the Old Dominion Hospital.

When Memorial Hospital, now known as MCV South Hospital, was opened in 1903, the Old Dominion Hospital was closed and the student nurses were transferred to the Memorial Hospital Training School for Nurses. It was at that time that the curriculum was changed to three years in length.

With the consolidation of UCM and MCV in 1913, the Memorial Hospital and Virginia Hospital Training School for Nurses were consolidated and named the Medical College of Virginia School of Nursing.

From 1920 to 1962, the Saint Philip School of Nursing for Negro students was operated. This school was administered by the MCV School of Nursing but was operated as a separate entity. The Saint Philip School of Nursing opened a special program in public health nursing in 1936. This program led to standard certification in public health nursing; a similar program was opened to white students in 1944.

In 1942, the MCV School of Nursing initiated a curriculum in addition to the diploma program which led to the degree of Bachelor of Science in nursing for students who had completed two years of selected liberal arts courses in an approved college or university prior to admission to the school. In 1952, a four year basic baccalaureate degree program was approved by the Board of Visitors. Its implementation terminated both the previous diploma and the five-year degree programs. From 1958-62 an associate degree program was offered at the MCV School of Nursing. Because of demand for admission to the baccalaureate program, the associate degree program was discontinued. In 1968 the Master of Science degree program in nursing was opened under the School of Basic Sciences and Graduate Studies.

The school takes pride in its long history of service to the profession of nursing and its record of accomplishments. Many "firsts" are listed in the official archives. *Regular studies* of its graduates and employers of graduates

attest to the school's high standards of quality education and performance in the practice of nursing.

In 1968 the School of Nursing revised the curriculum of the four-year degree program. Students now pursue the freshman and sophomore requirements of the baccalaureate degree program at the Academic Campus of VCU or at any other accredited junior or senior college of their choice and then enter the nursing major as juniors for the study of clinical nursing and health sciences.

PHILOSOPHY

The faculty of the school believe that education, nursing, other health services, and society are interdependent and are, therefore, accountable one to the other.

The purposes of education are to help individuals understand the world in which they live and to enhance their capacities to become agents for positive change. Professional education develops conviction for continuing involvement in learning and service.

The primary goal of nursing is to assist individuals, sick or well, in the performance of those activities contributing to health or its recovery, or to a peaceful death, that they would perform unaided had they the necessary strength, will, or knowledge.¹ The uniqueness of nursing is encompassed in its primary responsibility for giving personal care on a continuing basis and in a variety of settings.

The professional nurse, using the holistic approach, gives patient care and directs other nursing personnel in giving care. The nurse functions interdependently with members of other disciplines in working toward health goals of individuals, families, and their communities. These goals are achievable through organization and provision of care, the nature of which is both therapeutic and preventive.

We believe the baccalaureate degree in nursing is the minimum level of education required for the practice of professional nursing.

PROGRAMS

The programs of the School of Nursing described in detail in this bulletin include the baccalaureate degree program and the master's degree program, in that order. The program in continuing education is described

briefly. Offerings of this program are numerous and varied and are published separately. These may be obtained by writing to the director, Continuing Education Program. The Certificate Program to prepare family nursing practitioners was established in 1974. Information may be obtained by writing to the nurse co-director, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 638, Richmond, Virginia 23298.

Bachelor of Science. The purpose of the baccalaureate degree program in nursing is to provide learning opportunities whereby the student acquires a sound body of knowledge and skills that are essential to begin the practice of professional nursing and may be used as a basis for advanced study in nursing.

Master of Science. This program is built upon the premise that graduate education provides opportunities for specialization in one clinical area in nursing. Emphasis is placed on preparing the graduate to deal with the continuing and expanding body of knowledge as it relates to the practice of nursing and to the modern concepts of health and illness.

Applicants must meet admission and academic requirements as given in the section "Programs in Graduate Studies" on pages 132-138.

Certificate, Family Nurse Practitioner. This is a 12 month program to prepare family nurse practitioners (for non-degree seeking students). Requirements for admission include R.N. preparation, experience in primary care, and a position as a family nurse practitioner to which the student will return after completion of the program.

The program provides registered nurses with the necessary skills and clinical expertise to provide health care to individuals and families in a collaborative relationship with primary care physicians. The training period encompasses eight months of didactic and practice experience and four months of preceptorship in a projected employment situation. For a limited number of students the opportunity is available to focus practice upon the care of the gerontologic client. A few stipends are available. Graduates are eligible to apply for certification by the Virginia Boards of Nursing and Medicine. Deadline for acceptance of applications is March 15 preceding an August admission.

Continuing Education. Because of the faculty's awareness of the needs of those engaged in the practice of professional nursing

¹ Virginia Henderson, *The Nature of Nursing* (New York: The Macmillan Company, 1967), p. 15.

to continue their education, Virginia's first program in continuing education staffed with full-time faculty was established in 1965. It offers a variety of noncredit educational opportunities for practicing registered nurses to update knowledge, to increase competencies in providing quality patient care, and to become involved in rapidly changing health delivery services. The philosophy of adult education is used in meeting the needs of registered nurses by building on past learning and experience and by recognizing that education for nursing is a continuing process.

FACILITIES

The Nursing Education Building is located at 1220 East Broad Street. Administrative and faculty offices, and classrooms are housed in this building. The laboratories and lectures in basic sciences are held in the facilities used by other schools on the MCV Campus.

The clinical laboratories for the nursing courses are conducted in the MCV Hospitals, in health agencies in the community and adjacent areas, and in other hospitals in the area. The student is given a wide diversity of experiences in both hospital and community-oriented nursing.

ACCREDITATION

The Medical College of Virginia, of which the School of Nursing is an integral part, was the first institution of its kind to be admitted to membership in the Southern Association of Colleges and Schools. As Virginia Commonwealth University, this accreditation has been continued.

The baccalaureate degree program in nursing is accredited by the National League for Nursing Department of Baccalaureate and Higher Degree Programs for students with no previous preparation in nursing and for graduates of diploma and associate degree programs. The program is accredited also by the Virginia State Board of Nursing; graduates are eligible to take the licensing examinations for registration.

The master's degree program is accredited by the National League for Nursing Department of Baccalaureate and Higher Degree Programs. MCV/VCU is a member of the Council of Graduate Schools of the United States.

ANNUAL LECTURESHIPS

Outstanding scholars are brought to the campus through a variety of resources. Students in the School of Nursing have access to special programs of an intellectual and cultural nature on both campuses of the university.

The Annual Nursing Lectureship, established in 1966 by contributions from graduates and friends of the School of Nursing, brings to the campus each year a person of national stature related to the field of nursing. Alumni and faculty plan and implement the lectureship which serves as an open forum to many publics in the health fields.

HONORS AND AWARDS

Dean's List. Recognition of high quality academic achievement is made through inclusion on the Dean's List, published at the close of each semester. Students who have carried at least 12 semester hours' credit and who have earned a grade of "C" or higher in all courses with an overall average of 3.1 are named to the Dean's List.

Yingling-Lyons Senior Achievement Award. Gifts to the institution at the time of the marriage of Dean Doris B. Yingling of the School of Nursing and Dean Harry Lyons of the School of Dentistry were used to establish an annual award in their names to be made to a senior student in the Schools of Nursing and Dentistry. Recognition is based on outstanding leadership ability and potential professional growth as determined by a selection committee of faculty and students.

Mable Montgomery Award. This award was established through gifts of faculty and students in honor of Miss Mable E. Montgomery, executive secretary of the Virginia State Board of Nursing, 1949-70. The award alternates annually between a senior student and a faculty member. Leadership, excellence in nursing, and outstanding personal qualities are considered in selecting the recipients.

Marguerite G. Nicholson Award. This award was established by alumni and friends of the school to honor a beloved alumna and former faculty member. The award is presented annually to a graduating senior student who best demonstrates the humanitarian qualities of unselfishness, helpfulness to others, consideration, humility, and loyalty to the school.

Baccalaureate Degree Program

ADMISSION REQUIREMENTS

Applications for admission are welcomed from men and women who have a sincere interest in preparing for a career in professional nursing. In selecting students for admission, the Admissions Committee looks for evidence of character, ability, maturity, and sound academic preparation. The committee attempts to choose applicants who give the greatest promise of profiting from the opportunities offered by the university and of preparing for a positive contribution to the practice of nursing and community life.

The student applying for admission must either be eligible for readmission or be in good standing at the college last attended. Usually, only those credits earned within 10 years preceding admission will be considered for transfer. In addition, credits must be applicable toward a degree at the institution in which they were earned.

A minimum of 60 semester hour credits with a quality point ratio equivalent to 2.0 is required; however, a ratio of 2.5 on a 4.0 scale is recommended. Usually, non-Virginia students must have a 3.0 quality point average. Computation of the quality point average utilizes academic courses only.

Foreign applicants who do not use English as their natural language must have a minimum TOEFL score of 550.

Procedures. Applicants are required to submit specific records in support of their application. In order to allow sufficient time for the careful and thorough review given to each application, these records should arrive before February 1 preceding admission to the junior year. Applications may be obtained by writing the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298; telephone (804) 770-4888.

1. Formal application for admission to the junior year—Application to be completed by the applicant and submitted as early as possible after September 15 of the year preceding entrance.

2. Secondary school records—Should be sent directly to the Admissions Office by the school.

3. College transcripts—An official transcript of record listing all work must be submitted from each college attended, including summer sessions.

4. Course summary—Applicants are expected to provide a listing of courses (with titles) that they expect to complete during the year preceding admission to the School of Nursing.

5. Test results—All applicants must submit the results of the Scholastic Aptitude Test of the College Entrance Examination Board. If this test has been taken previously, it need not be repeated, but the earlier results must be submitted.

6. Self evaluation—All applicants are expected to complete the self-evaluation form enclosed in the application kit.

7. Personal evaluation—Three evaluations are required of each applicant. Appropriate forms are provided.

8. Personal interview—Interviews are not required. If the applicant desires one, the interview should be arranged in advance.

9. Medical examination—A complete medical examination is required within six months prior to admission. Appropriate forms for the report will be provided.

Upon receipt of all required forms and records, the student's credentials are submitted to the faculty admissions committee for review and decision. Applications received prior to February 1 will be given priority for review and applicants notified by April 1.

Sufficient proficiency in mathematics for computing medication dosages is one requirement for satisfactory completion of NUR 359—Foundations for Nursing Practice and for admission to the nursing courses of the second semester. For this reason, following acceptance, the student will receive information for ordering a programmed instruction text in calculating drug dosages along with study guides. Students will be examined on this information during orientation week.

Registered Nurse Applicants. The School of Nursing provides an opportunity for registered nurses to be admitted to the baccalaureate program. Graduates from state-approved diploma programs and associate degree programs in nursing, who are currently licensed to practice, may be admitted for part- or full-time study. Registered nurse students must hold a Virginia license.

Admission Requirements and Procedures. Refer to information above. The same lower division prerequisites are required of the registered nurse student as of the generic student.

In addition, the registered nurse applicant must supply an official copy of the nursing school transcript and an official copy of the State Board Examination scores; and upon request, the scores made on the N.L.N. Graduate Nurse Examination. These are used for counseling purposes.

Establishment of Credit. The registered nurse student may establish credit for courses in several ways: (a) through proficiency examinations as explained below, (b) through transfer of credit from other colleges, (c) through taking courses as offered to basic students.

Proficiency examinations are of several kinds:

- A. Those developed and distributed by the College Entrance Examination Board. Information concerning these tests, called College Level Examination Program tests, may be obtained from the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027.

These tests are available through the Academic Campus of Virginia Commonwealth University. They are given on a monthly schedule, and arrangements may be made for these tests one month prior to the testing date. The fee for each examination is \$15. Subject examinations are available in multiple areas as listed in information available from the College Entrance Examination Board (C.E.E.B.). Semester hour credit is granted and satisfactory scores are determined in accordance with the recommendations of the C.E.E.B. and vary with different subjects. Students may earn full course credit by examination for general education courses.

- B. Those given by the faculty of the School of Nursing. These proficiency examinations in nursing and other closely allied courses include teacher-made and standardized examinations. Students may obtain a course syllabus from the School of Nursing for review prior to the examination. Course credit is given upon successful performance on the examinations. Students may earn full course credit by examination for courses in the nursing curriculum shown below:

BAS 361.	Health Science I
BAS 362.	Health Science II
BAS 463	Health Science III
MIC 365.	Infection and Immunity
PSY 304.	Human Development
NUR 339/439.	Nursing of Adults
NUR 369/469.	Nursing of Children
NUR 349/449.	Psychiatric-Mental Health Nursing
NUR 329/429.	Maternity Nursing

A charge of \$5 for each examination is made to cover cost of materials.

Length of Program for Registered Nurses.

The length of each registered nurse student's program within the major is determined by performance on the proficiency examinations. The maximum length of full-time study is two academic years on this campus.

It is possible, however, to complete the nursing major requirements in one calendar year. This special plan is for the registered nurse who establishes sufficient credit through proficiency examinations and starts in June with a six-week session. Upon satisfactory completion of the summer session, the registered nurse enters the senior year in August and completes requirements for a degree in two semesters. It is mandatory that the registered nurse take all the courses as listed for the generic student in the fourth semester.

In order to qualify for completion of the major in one calendar year, the registered nurse must have completed the liberal arts requirements before the final semester of the senior year. The Advanced Standing Committee, composed of representatives from the faculty and student body of the Schools of Nursing and Basic Sciences, and the Department of Nursing, is responsible for the placement of students in the curriculum. Their decision is based on the performance of the applicant in all previous educational experiences and in the nursing proficiencies.

Once the liberal arts have been procured or a plan for their acquisition is available, application should be made to the School of Nursing. Application materials should be requested following completion of 30 semester hours of college study or the fall before expected admission to the School of Nursing.

CURRICULUM PLAN

The freshman and sophomore years of the baccalaureate degree program may be taken at the Academic Campus of VCU or at any other accredited junior or senior college. If the student attends another college to acquire

the prerequisites, counseling is provided to assure the proper selection of courses. It is the applicant's responsibility to seek advice from the admissions office or the School of Nursing on courses taken prior to admission.

The student enters the MCV/VCU School of Nursing with the status of junior for the study of clinical nursing and health sciences. Two years on the MCV Campus are necessary for basic students to complete the requirements for a Bachelor of Science in nursing degree.

For admission as a junior, the student must present a minimum of 60 semester hours. The following prerequisites apply for students entering in 1976 and 1977:

	Semester Hours
English Composition.....	6
Natural Sciences (general chemistry, 2 semesters; and either zoology or biology, 1 or 2 semesters).....	12
Social Sciences (must include history, 2 semesters, general psychology, and general sociology or cultural anthropology).....	18
Mathematics (baccalaureate level).....	3
Humanities (art, music, drama, philosophy, literature, religion, or foreign language).....	12
Electives—no more than 3 semester hours in an activity course.....	9
<i>Beginning in 1977, students must present the following prerequisites:</i>	
	Semester Hours
COMMUNICATIONS.....	6-9
<i>Required:</i> English composition, 3 SH.	
<i>Elective:</i> speech and/or literature, 3-6 SH.	
HUMANITIES.....	12
<i>Required:</i> history, 6 SH.	
<i>Elective:</i> philosophy, logic, literature, art, music, drama, religion or foreign language, 6 SH.	
SOCIAL SCIENCES.....	18
<i>Required:</i> general psychology, 3 SH.	
*developmental psychology, 3 SH.	
general sociology, 3 SH.	
<i>Elective:</i> anthropology, educational psychology, urban studies or political science, 9 SH.	
NATURAL SCIENCES.....	13-16

*Child or adolescent psychology acceptable.

Required: general chemistry, 8 SH.
 **human anatomy and physiology, 5-8 SH.

MATHEMATICS.....	3
Statistics preferred; algebra or other freshman mathematics course accepted.	
OTHER ELECTIVES.....	2-8
No more than three credits in an activity course accepted.	
Total semester hour credits.....	60

A typical program in the upper division curriculum is as follows:

JUNIOR YEAR, FIRST SEMESTER

BAS 361.	Health Science I.....	7
MIC 365.	Infection and Immunity.....	3
PSY 304.	Human Development.....	3
NUR 359.	Foundations for Nursing Practice.....	5

SECOND SEMESTER

BAS 362.	Health Science II.....	3
NUR 372.	Theory of Family and Group for Nursing Practice.....	2
***NUR 339.	Nursing of Adults.....	7
***NUR 349/449.	Psychiatric-Mental Health Nursing.....	6

SENIOR YEAR, THIRD SEMESTER

BAS 463.	Health Science III.....	3
NUR 473.	Managerial Theory for Nursing Practice.....	3
***NUR 469.	Nursing of Children.....	6
***NUR 429.	Maternity Nursing.....	6

FOURTH SEMESTER

NUR 474.	Dimensions of Professional Nursing.....	2
NUR 479.	Leadership and the Nursing Process.....	7
NUR 489.	Community Health Nursing.....	6
PRM 488.	Introduction to Public Health Nursing.....	2

All courses listed for the first three semesters within the upper division are prerequisite to the fourth semester. Other prerequisites are shown in course descriptions.

**Students enrolled in a college that does not offer an appropriate course in human anatomy and physiology may take this in the VCU Summer Session between the freshman and sophomore years.

***These courses may be taken interchangeably in the junior or senior years.

In addition to the course requirements of the lower and upper divisions, it is expected that students complete a course in first aid prior to graduation. If the course can be completed before admission to the upper division major, it is desirable.

Commuting and Community Practice. Students are assigned to other hospitals and health agencies in the Richmond-Petersburg area. Occasionally these assignments may be during evening hours. Public transportation is sometimes available to reach these assignments, but use of an automobile is often necessary for carrying out nursing practice in the community as well. To a limited extent, state-owned cars may be rented if use of a personal automobile is not possible. Transportation costs vary widely each semester and may range from very little to more than \$100. Students who anticipate need of financial assistance for transportation costs should apply to the Office of Financial Aid in advance.

Use of Educational Materials. During the program, students have access on a limited basis to certain equipment, such as tape recorders and books not owned by the university library. It is expected that all such materials will be used with care and returned in good condition within the time limit specified. If not, students will be expected to pay the cost of repair or replacement. If such obligations are not met, course grades will be withheld from the student and will not be recorded on the permanent record. Thus, graduation, recommendation to take State Board Examinations, or transfer to another college or university would be impaired by failure to meet these obligations.

ACADEMIC REGULATIONS

Full-time Students. The student is classified as a junior when enrolled in upper division courses. Calculation of the grade point average is based on grades in the School of Nursing.

Progression to the second semester of the program is based on earning at least a "C" in Foundations of Nursing Practice and a passing grade in other courses. All courses in the first semester are prerequisite to those of the second semester.

Progression to the third semester is based upon satisfactory completion of the courses of the first year and a cumulative grade point average of not less than 1.91. Exception to this may be made for the student who has completed only one clinical nursing course in the second semester. If this is the case, the indi-

vidual will not be able to complete all requirements for graduation by the end of the fourth semester.

Upon request of the student to the Academic Policy Committee, consideration will be given to the individual with a grade point average between 1.71 and 1.90.

All courses of the first three semesters are prerequisite for the courses of the fourth semester.

Part-time Students. Refer to course descriptions and prerequisites listed with these.

Method of Grading. See page 20.

The clinical laboratory grading system is satisfactory or unsatisfactory. Unsatisfactory clinical application results in a grade of "F" for the course.

The student may not receive a grade of "I" (Incomplete) in a nursing course if the deficiency is in the clinical laboratory aspect of the course.

Academic Probation. A student is placed on academic probation when either his overall cumulative average falls below 2.0 or a "D" or below is earned in a nursing course. The minimum passing grade for nursing courses is "C."

Removal of Academic Deficits. Nursing courses with a grade of "D" or below may be repeated once upon recommendation of the course facilitator and the assistant dean for the undergraduate program the next time the course is given. When a course is repeated and a grade of "D" or below is earned, the student must withdraw from the School of Nursing, but may apply for readmission in one year.

Non-nursing courses passed with a "D" grade may not be repeated. The one exception is as follows: the chairman of the department concerned may recommend that a course be repeated if the course is specifically required in the upper division. Otherwise, the student may select an appropriate substitute in a behavioral or natural science with the approval of the course leader and the assistant dean for the undergraduate program.

Non-nursing courses with a grade "F" may be either repeated or a comparable course may be taken with the approval of the chairman of the respective department.

Readmission. The student desiring readmission is given equal consideration with other applicants being reviewed at a scheduled meeting of the admissions committee. The procedures for readmission are the following:

1. The applicant for readmission must submit a letter to the Admissions Committee requesting review.

2. Prior to acceptance for readmission the applicant is required to be interviewed by the full Admissions Committee or by individual members thereof.

3. The applicant's record from the School of Nursing will be used as one criteria for making a decision. The applicant's employment record, educational record, and other experiences subsequent to termination at the School of Nursing will also be considered.

Requirements for Graduation. To be a candidate for the degree of Bachelor of Science in nursing, the student must be recommended by the faculty and must:

1. Complete all requirements for the prescribed curriculum.

2. Earn a "C" (2.0) in all nursing courses.

3. Earn a cumulative average of "C" (2.0) in all work presented for graduation.

4. Enroll in the School of Nursing for the final two semesters of study.

5. Clear all financial obligations to the university, return all materials to the library, and fulfill any other specifically stated special requirements pertaining to the educational program.

Achievement Tests. During the examination period following each semester, students are required to take various standardized achievement examinations in nursing and health sciences. Comprehensive examinations in nursing are given at the completion of the program.

Class Attendance. Attendance at all classes and laboratories is expected. Absences without reason are not condoned; requests for absence on a convenience basis are not granted. For example, medical and dental appointments, except emergencies, do not constitute basis for an excused absence. Students are expected to make up material missed because of absence.

Absence from clinical laboratory must be reported to the instructor by the beginning of the laboratory period and to the unit by the beginning of the shift during which the laboratory hours occur.

Any student who attends fewer than 87 percent of laboratory sessions for any course will receive a grade of "F."

In case of extenuating circumstances, exceptions to this policy may be made by group decision of faculty teaching the course.

Separation from the School. A student who wishes to withdraw from the School of Nursing should discuss his plans with the assistant dean of the undergraduate program, her designee, or the associate dean of student life. Before leaving the school, the proper forms must be obtained from the registrar and completed by the student.

In addition to those standards of conduct described in the *Rules and Procedures of Virginia Commonwealth University* and the *Medical College of Virginia Honor Code*, a student may be suspended or dismissed from the school for failure to meet academic requirements or failure to exhibit the attitudes and skills deemed necessary to function as a professional nurse.

The School of Nursing recognizes its responsibility to the nursing profession and to the consumer of health care. Therefore, any action by a nursing student considered to be unprofessional conduct shall be deemed cause for disciplinary action.

Unprofessional conduct may be defined as, but is not limited to:

1. Fraud or deceit in filing application for admission to the school, such as false representation on the application.

2. An act which violates the accepted social norms regarding conduct of one person towards another. Social norms refers to the laws, written or unwritten, which protect the individual and/or his property from *unwanted acts of another*, such as stealing, lying, cheating, and slander.

3. Conviction of a felony.

The School of Nursing subscribes to the statements set forth in Section VI; 4.1, of *The Law, Governing the Examination, Licensure and Practice of Professional Nurses and Practical Nurses*, as issued by the Virginia State Board of Nursing. When applicable, these standards will be used in determining a student's eligibility for continuance in, or readmission to, the nursing major.

Master of Science Degree Program

In 1967, the State Council for Higher Education approved Virginia's first graduate program in nursing to be implemented at the Medical College of Virginia. In 1968, master's students in nursing enrolled in the MCV/VCU School of Nursing through the School of Basic Sciences and Graduate Studies.

Graduate study in nursing is offered with emphasis on preparation for teaching or clinical specialization in medical-surgical nursing, maternal-child nursing, psychiatric-mental health nursing, and teaching or supervision in community health nursing. A graduate study option with emphasis on preparation as a family nurse practitioner is offered in the community health nursing program.

Selection of student experiences is based on prior academic work and nursing practice. Course offerings may vary with the individual students. Flexibility permits students to set their own goals, try new ideas, and analyze the results of such efforts. With a team of multi-disciplinary experts available for consultation and advisement, the student is exposed to varied philosophies of nursing.

Nationally known scholars in various health fields are invited as visiting lecturers and provide a unique opportunity for students to be stimulated by leaders in nursing and related health fields.

A minimum of 35 semester hours of course work, exclusive of the six credits assigned for the thesis, is required for the Master of Science degree. The student may arrange with his or her MCV advisor to take up to one third of the required credits in another institution and transfer these to MCV/VCU. *It is imperative, however, to obtain approval for such courses before enrolling in them.*

All majors in nursing are required to register for the following courses:

FIRST SEMESTER

		Semester Hours
*BIY 521.	Statistics.....	2-3
NUR 575.	Contemporary Nursing.....	3.5

SECOND SEMESTER

GRS 660.	Methods of Research	3
	(or equivalent course)	
NUR 600.	Research Seminar	1
NUR 630.	Thesis	

THIRD SEMESTER

NUR 630.	Thesis	6-12
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In addition to the above and required courses in the area of clinical interest, the student also selects courses in a functional area. The teaching option requires nine semester hours in education plus three semester hours in teaching practicum; the clinical specialist

requires nine hours in selected supportive courses. Supervision in community health agencies requires nine semester hours in management and/or administration courses. All programs are planned with the student on an individual basis, using the student's background as a base and professional goals as a guide.

ACCREDITATION

The Master of Science program in nursing is accredited by the Department of Baccalaureate and Higher Degree Programs of the National League for Nursing.

SCHOLARSHIPS, GRANTS, LOANS

Funds available are allocated as soon as feasible after being appropriated. It is therefore advisable to apply for admission early—even one year in advance of admission date and to indicate the need for financial assistance.

ADMISSION REQUIREMENTS

Bachelor of Science degree in nursing from NLN accredited school or equivalent program to MCV/VCU School of Nursing with upper division major in nursing.

Graduate Record Examination scores (Scholastic Aptitude Test only).

General admission requirements for graduate study at the Medical College of Virginia of Virginia Commonwealth University. (See pages 133-134)

Current license to practice as a registered nurse in Virginia.

Preference will be given to applicants with a minimum of one year of experience within the last five years. There are additional requirements for admission to the Family Nurse Practitioner Program. For information, contact the Chairman, Department of Community Health Nursing.

PROGRAMS AND CLINICAL FACILITIES

Community Health Nursing

The major in community health nursing is organized to include theoretical knowledge in the physical, behavioral, and sociocultural factors that influence human behavior in health and illness. The advanced clinical content in nursing includes opportunities to apply theories and modalities of treatment in family nursing and in meeting health needs of populations and defined community groups. Emphasis is on the identification and practice of

*A statistics course taken prior to admission will be evaluated for equivalence.

innovative roles in nursing within the context of a changing health care system. Related courses in other fields basic to the specialty are selected for their contribution to the major. Students may select a sequence of courses in disciplines related to an area of special interest within the broad scope of community health nursing and develop this area in their clinical practice and research. Graduate study in education, administration, family nurse practice, and special areas of interest is shared with graduate students from fields other than nursing. Students who select the Family Nurse Practitioner Program are eligible to apply for certification by the Virginia Boards of Nursing and Medicine.

Resources and Facilities. A variety of facilities and supporting personnel are available for a choice of clinical experiences, ranging from a free youth clinic to county and state health departments. A rural or urban setting may be selected in which to identify and evaluate theories and interventions relevant in advanced community health nursing. Practice in the functional area of the student's choice includes: opportunities to work with members of the university faculty, or members of the administrative staff of a voluntary or official health agency, or as an advanced community health nurse practitioner in the area of special interest. Clinical experiences for family nurse practice include practice in ambulatory settings with physician/nurse practitioner preceptors and a semester of practice in collaboration with a primary care physician in the community. In addition to joint association with the School of Medicine for preparation of nurse practitioners, there is opportunity for close association with the Center for Community Health, which offers interdisciplinary community health experiences.

Maternal-Child Nursing

A student in the maternal-child major becomes a partner in a teacher-learner enterprise with a team of multi-discipline health experts. Opportunities to develop expertise in many facets of episodic and distributive health care are available.

Many facets of the maternal-child program help to develop students distinguished by intellectual curiosity and individual creativity.

Resources and Facilities. The facilities available for teaching maternal-child nursing at the graduate level permit broad exploration and selected depth study in a wide variety of settings.

MCV Hospitals provide numerous inpatient and outpatient specialty services to maternity and pediatric patients and their families.

Believing that fragmentation in health services can best be prevented by professional nurses who possess knowledge and still beyond that needed to effect changes in the patient's immediate hospital situation, home visits and community facilities are integral parts of the student's clinical experiences.

Additional facilities available to the School of Nursing include: the hospitals' outpatient department, city and private hospitals, nursery schools, social service agencies, homes for unwed mothers, public health departments, and the Instructive Visiting Nurse Association, private physicians' offices, Consultation and Evaluation Clinic, Virginia Treatment Center, Cerebral Palsy Center, Genetic Counseling within the Division of Pediatric Endocrinology of the Department of Pediatrics at MCV/VCU, Bureau of Crippled Children Clinics (Supported by Children's Bureau of Department of Health, Education and Welfare) including: pediatric surgery, neurosurgery, urology, orthopedic, eye and ear, burn surgery; cystic fibrosis; and congenital heart.

Medical-Surgical Nursing

MCV Hospitals' patients are drawn from both urban and rural areas of Virginia. The complexity of their illness provides a wealth of experiences for the student of medical-surgical nursing. Opportunity to move out into the community, as well as study within the hospital complex, offers the student breadth as well as depth of preparation.

The focus of the graduate program in medical-surgical nursing is predominantly on physiological problems. The advanced nursing courses concentrate on the problems of individuals who experience cardiac, respiratory, neurological, and oncological disorders.

Students electing the teaching option have the opportunity to participate with undergraduate faculty in planning, organizing, implementing, and evaluating undergraduate student experiences. Actual practice in classroom teaching is provided under guidance. A micro-teaching session affords opportunity for student self-evaluation and improvement.

Students electing clinical specialization may select a focus from among the subspecialties in medical-surgical nursing for in depth study and concentrated clinical practice. Practicing clinical specialists from MCV Hospitals are available for consultation which affords the

student the option to work in concert with those in actual practice.

Psychiatric-Mental Health Nursing

The student achieves a measure of expertise toward meeting both professional and personal goals through a program of education which is individually planned. Practice in clinical settings is selected on the basis of goals. Individual supervision is appropriate to the particular clinical situation. The student has access to teams of multidisciplinary experts with whom to work in planning and implementing care for individual patients and their families and for persons in the community. Opportunities for students to participate in seminars, conferences, and informal sessions with scholars in residence are ongoing activities within the School of Nursing.

Resources and Facilities. The campuses of VCU and the metropolitan Richmond area offer graduate students in nursing the gamut of resources and facilities for optimal learning and clinical experience. Students are encouraged to identify areas of special interest and to study specific clinical nursing problems.

Clinical facilities include the inpatient services and clinics of MCV Hospitals, Saint Mary's Hospital, and Central State Hospital. Central State Hospital is located in Petersburg, 30 miles south of Richmond. All of these institutions are accredited by the Joint Commission on Accreditation of Hospitals.

Other resources on the MCV Campus include:

The Virginia Treatment Center for Children, a 40-bed psychiatric hospital for children and the Division of Child Psychiatry of MCV/VCU;
MCV/VCU Alcoholic Unit, housing the Bureau of Alcoholic Studies and Rehabilitation, which involves a cooperative relationship between the State Health Department, MCV/VCU, and the University of Virginia. Its purpose is to provide service, training, and investigation in the care of alcoholic patients.

Other community resources include:

Mental Aftercare Program, a joint effort involving the State Department of Health and the Department of Mental Hygiene and Hospitals.

Monroe Mental Health Clinic, an open-door clinic for city residents and for patients discharged from Eastern State Hospital.

Rubicon, a residential treatment facility

for drug addicts.

Fan Free Clinic, a walk-in facility in the Fan District.

Resources within the Commonwealth of Virginia include: Eastern State Hospital in Dunbar, Riverside General Hospital in Newport News, and Tidewater Mental Health Clinic in Williamsburg; CHAP House, a Community Hospital Action program sponsored by the state and associated with Central State Hospital.

COMMUNITY HEALTH NURSING

Typical Program—Teaching

FIRST SEMESTER

NUR 575.	Contemporary Nursing
PIO 507.	Clinical Physiology
BIS 521.	Biostatistics
EDU 601.	Philosophy of Education
GRS 660.	Methods of Research

SECOND SEMESTER

NUR 500.	Advanced Community Health Nursing
PIO 508.	Clinical Physiology
NUR 600.	Research Seminar
AHP 573.	Teaching in Health Professional Schools
EDU 615.	Curriculum Development

THIRD SEMESTER

NUR 501.	Advanced Community Health Nursing
NUR 571.	Teaching Practicum
NUR 630.	Thesis

Typical Program—Supervision

FIRST SEMESTER

NUR 575.	Contemporary Nursing
PIO 507.	Clinical Physiology
BIS 521.	Biostatistics
BUS 641.	Organizational Theory
GRS 660.	Methods of Research

SECOND SEMESTER

NUR 500.	Advanced Community Health Nursing
PIO 508.	Clinical Physiology
SOC 699.	Sociology of Small Group Behavior
BUS 640.	Management Theory
NUR 600.	Research Seminar

THIRD SEMESTER

NUR 501.	Advanced Community Health Nursing
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NUR 513.	Practicum in Supervision
NUR 630.	Thesis

Typical Program—Family Nurse Practice**FIRST SEMESTER**

NUR 575.	Contemporary Nursing
NUR 502.	Assessment in Family Nurse Practice
PIO 507.	Clinical Physiology

SECOND SEMESTER

NUR 500.	Advanced Community Health Nursing
NUR 503.	Clinical Judgments in Family Nurse Practice
PIO 508.	Clinical Physiology

SUMMER SESSION

NUR 504.	Management of Common Health Problems of Children and Adults
GRS 660.	Methods of Research

THIRD SEMESTER

NUR 501.	Advanced Community Health Nursing
NUR 600.	Research Seminar
BIY 521.	Biostatistics

FOURTH SEMESTER

NUR 505.	Nurse Practitioner Practicum
NUR 660.	Thesis

MEDICAL-SURGICAL NURSING**Typical Program—Teaching****FIRST SEMESTER**

NUR 575.	Contemporary Nursing
GRS 660.	Methods of Research
PIO 507.	Clinical Physiology
EDU 615.	Curriculum Development

SECOND SEMESTER

NUR 520.	Advanced Medical-Surgical Nursing
BIS 521.	Biostatistics
NUR 600.	Research Seminar
EDU 688.	Instructional Strategies for Adults
PSY 607.	Advanced Educational Psychology
PIO 508.	Clinical Physiology

THIRD SEMESTER

NUR 521.	Advanced Medical-Surgical Nursing
NUR 571.	Teaching Practicum
NUR 630.	Thesis

Typical Program—Clinical Specialization**FIRST SEMESTER**

NUR 575.	Contemporary Nursing
GRS 660.	Methods of Research
PIO 501.	Mammalian Physiology

SECOND SEMESTER

NUR 520.	Advanced Medical-Surgical Nursing
BIS 521.	Biostatistics
NUR 600.	Research Seminar
PSY 503.	Psychology of Personality

THIRD SEMESTER

NUR 521.	Advanced Medical-Surgical Nursing
NUR 573.	Selected Clinical Practicum
NUR 630.	Thesis

MATERNAL-CHILD NURSING**Typical Program—Teaching****FIRST SEMESTER**

NUR 575.	Contemporary Nursing
GRS 660.	Methods of Research
PIO 507.	Clinical Physiology
EDU 615.	Curriculum Development

SECOND SEMESTER

NUR 542.	Advanced Maternal-Child Nursing
BIS 521.	Biostatistics
EDU 603.	Seminar in Child Growth and Development
NUR 600.	Research Seminar
PIO 508.	Clinical Physiology

THIRD SEMESTER

NUR 543.	Advanced Maternal-Child Nursing
NUR 571.	Teaching Practicum
PSY 607.	Advanced Educational Psychology
NUR 630.	Thesis

Typical Program—Clinical Specialization**FIRST SEMESTER**

NUR 575.	Contemporary Nursing
GRS 660.	Methods of Research
PIO 507.	Clinical Physiology

SECOND SEMESTER

NUR 542.	Advanced Maternal-Child Nursing
BIS 521.	Biostatistics
NUR 600.	Research Seminar
GEN 501.	Human Genetics

THIRD SEMESTER

NUR 543.	Advanced Maternal-Child Nursing
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- NUR 573. Selected Clinical Practicum
 SOC 609. Seminar in the Family
 NUR 630. Thesis

PSYCHIATRIC MENTAL HEALTH NURSING

Typical Program—Clinical Specialization

FIRST SEMESTER

- NUR 575. Contemporary Nursing
 NUR 551. Advanced Psychiatric-Mental Health Nursing I
 NUR 555. Group Seminar I
 GRS 660. Methods of Research
 PSY 616. Psychopathology

SECOND SEMESTER

- NUR 552. Advanced Psychiatric-Mental Health Nursing II
 NUR 556. Group Seminar II
 BIS 521. Biostatistics
 SOC 613. Seminar in Social Organization and Stratification
 PRM 590. Epidemiology
 SOC 607. Seminar in Minority Group Relations
 NUR 600. Research Seminar

THIRD SEMESTER

- NUR 553. Advanced Psychiatric-Mental Health Nursing III
 NUR 557. Group Seminar III
 NUR 573. Selected Clinical Practicum
 NUR 630. Thesis

Typical Program—Teaching

FIRST SEMESTER

- NUR 575. Contemporary Nursing
 NUR 551. Advanced Psychiatric-Mental Health Nursing I
 NUR 555. Group Seminar I
 GRS 660. Methods of Research
 EDU 688. Instructional Strategies for Adults

SECOND SEMESTER

- NUR 552. Advanced Psychiatric-Mental Health Nursing II
 NUR 556. Group Seminar II
 BIS 521. Biostatistics
 NUR 600. Research Seminar
 PSY 616. Psychopathology
 EDU 615. Curriculum Development

THIRD SEMESTER

- NUR 553. Advanced Psychiatric-Mental Health Nursing III

- NUR 557. Group Seminar III
 NUR 571. Teaching Practicum
 NUR 630. Thesis

UNDERGRADUATE FACULTY

Professors: Yingling (Dean); Borlick (Chairman, Department of Community Health Nursing); Spaulding (Chairman, Department of Maternal-Child Nursing); Wiley (Chairman, Department of Psychiatric-Mental Health Nursing)

Associate Professors: Bobbitt (Assistant Dean, Undergraduate Program); Moran (Chairman, Medical Surgical Nursing); Bampton; Crummette; Eanes; Fernandez; F.; Fowler; Francis; Gwaltney; Hecht; Hydorn; Hord; Hudleson; Hutchins; Keller; Kissinger; Mason; Moore; Munjas; Richardson; Thompson

Assistant Professors: Bach; Brocking; Calderon; Collins; Downs; Durrett; Fernandez, T.; Griffiths; Jones; Lacey; Mancin; Morofka; Munton; Swenson; Tesh; Wallace; Youngkin

Instructors: Baker; Bell; Clark, B.; Davis; Douglas; Gary; Godfrey; Mock; Peter; Sherrill; Viperman

Joint Appointments—Department of Nursing

Assistant Professors: Barth (Director of Nursing Services, MCVH); Bennett; Davisson (Division Director, Pediatric Nursing); Mancini

COURSES OF INSTRUCTION

BAS 361. Health Science I. See page 87.

BAS 362. Health Science II. See page 87.

BAS 463. Health Science III. See page 87.

MIC 365. Infection and Immunity. See page 92.

NUR 319. Concepts for Nursing Practice. LH-6; CI H-12; SH-5. S. Designed for R.N. students who already have a knowledge base in nursing. The course is intended to refine the student's understanding of the nursing process. Theory encompasses man's adaptation to stress, entry into the health care system, and the further development of a concept of nursing. Students also study the family as a system, communication within the family, major stressors, and theory of groups. Clinical application is provided in a variety of hospital and community settings.

NUR 329/429. Maternity Nursing. LH-3; CI H-9; SH-6. I, II. PR: NUR 359, PR or CR: NUR 372, BAS 362. A family centered experience to prepare the student to plan and give care and guidance to the family unit. Encompasses normal and important abnormal aspects of the maternity cycle from the period of preparation for parenthood through the birth process and subsequent growth and development of the newborn.

NUR 339/439. Nursing of Adults. LH-4; CI H-9; SH-7. I, II. PR: NUR 359. Furthers the student's ability to use the nursing process in the care of hospitalized adults who are threatened with or have pathophysiological and/or psychosocial conditions requiring nursing intervention encompassing preventive, therapeutic, and rehabilitative aspects.

NUR 349/449. Psychiatric-Mental Health Nursing. LH-3; CI H-9; SH-6. I, II. PR: NUR 359, NUR 372, BAS 362. Planned to help the student gain an understanding of mental health and mental illness and acquire basic skills in caring for emotionally ill persons. A problem-solving approach is used to study the behavior of individuals and groups and to increase the student's understanding of the dynamics of human behavior and interpersonal processes. Clinical laboratory experience is provided in hospitals and in other community settings.

NUR 359. Foundations for Nursing Practice I. LH-2; Lab H-4; CI H-5; SH-5. PR or CR: BAS 361, 365, PSY 304. Enables student to see himself as becoming a professional person through the introduction of theory and skills basic to the practice of nursing. Theory emphasizes the nature of man, man's adaptation to stress, man's entry into the health care system, and the development of a general concept of nursing. Includes supervised clinical experiences to assist the student to use theoretical material in the application of the nursing process to the needs of individuals in a variety of settings.

NUR 369/469. Nursing of Children. LH-3; CI H-9; SH-6. I, II. PR: NUR 359. Furthers the student's ability to use the nursing process to assist children and their families in making therapeutic adaptations on the well-ness-illness continuum. Theoretical content is presented in relation to illness and promotion of health in a developmental sequence within a family-centered framework. Clinical experience provides the student with opportunities to care for parents and their children who may be either ambulatory or moderately to acutely ill who require nursing intervention encompassing preventive, therapeutic, and rehabilitative aspects.

NUR 372. Theory of Family and Group for Nursing Practice. LH-2; SH-2. II. PR: NUR 359. To assist the student with nursing intervention in families and groups. Emphasis is on the family as a system, communication within the family, major stressors in the family, and the theory of groups. Supervised clinical application is provided in clinical nursing courses.

NUR 419. Elective Study. SH-1 to 5. I, II, S. PR: consent. Supervised study and/or clinical laboratory planned to meet the learning objectives of the student.

NUR 471. Managerial Theory for Nursing Practice—Health Care Systems and Situations. LH-3; SH-3. I. PR: NUR 372. CR: a clinical nursing course. Designed to enable the student to explore and acquire working knowledge of selected concepts and principles of ad-

ministration and management within the health care systems and situations. Working in groups, students utilize theory in case presentations and problem solving. The course establishes a baseline for assuming leadership roles.

NUR 472. Dimensions of Professional Nursing. LH-2; SH-2. II. PR: NUR 473. CR: a clinical nursing course. Broadens the student's concept of nursing by focusing on nursing as a profession, a method of inquiry, and as it relates to health in contemporary society.

NUR 479. Leadership and the Nursing Process. LH-2; CI H-15; SH-7. II. PR: all courses of the first three semesters. Provides senior students opportunities for synthesis and practice in comprehensive nursing care. Joint seminars with NUR 489 encompass discussion of nursing care and management problems in clinical and community settings. Clinical experiences in a variety of specialty areas are provided in MCV Hospitals, in other area hospitals, and includes care of both individuals and groups of patients.

NUR 489. Community Health Nursing. LH-2; CI H-12; SH-6. II. PR: all 300 level courses, NUR 473, 459, BAS 463. Emphasizes nursing of people in their normal environments, such as home, school, work, and the community. Provides opportunity for students to synthesize previous learning experiences through the study of health care of selected families and population groups and to apply public health concepts and principles of management to nursing in a community.

PRM 488. Introduction to Public Health Science. LH-2; SH-2. II. Presents the evolution and principles of modern public health practice and their application to current trends in medical care. Content includes demography, epidemiology, community health services, public health care and public health administration, and international health. Correlation of these principles with the holistic approach to the provision of health services and medical care is emphasized.

PSY 304. Human Development. LH-3; SH-3. I. A survey course covering the years from birth throughout the life span. Discusses the cultural, social, and biological factors in the development of normal maturation. Covers recent advances in behavioral theory as well as advances in ego psychology.

GRADUATE FACULTY

Professors: Yingling (Dean); Borlick (Chairman, Department of Community Health Nursing); Repp; Spaulding (Chairman, Department of Maternal-Child Nursing); Wiley (Chairman, Department of Psychiatric-Mental Health Nursing)

Associate Professors: Francis; Hutchins; Kissinger; Mason; Moran (Chairman, Department of Medical-Surgical Nursing); Munjas; Thompson
Assistant Professors: Crummette; Hamric; Morofka

(Listings for basic sciences faculty are found in the sections for School of Basic Sciences.)

GRADUATE

The descriptions provided here are for the courses in the major in nursing and are restricted to students in this major. Please see other sections in this catalog for courses in other departments; viz., biology and genetics, biometry, physiology, and public health science.

Courses in related fields and cognate areas which are offered at the Academic Campus are described under the offerings of the various schools e.g., business, education, arts and sciences, social work.

NUR 500. Advanced Community Health Nursing. LH-3; CI H-8; SH-5. II. PR: NUR 575. Advanced concepts and theories basic to the study of individuals and families in the community. Advanced nursing practice in examining selected conceptual frameworks for family analysis and nursing intervention is provided through intensive work with families encountering problems on an illness-wellness continuum.

NUR 501. Advanced Community Health Nursing. LH-3; CI H-8; SH-5. I. PR: NUR 575, 500. Theories and concepts basic to health needs of populations and of change strategies related to community organization and action for health. Clinical practice with families and selected community health planning groups focuses on the role of the nurse as a change agent.

NUR 502. Assessment in Family Nurse Practice. LH-7; CI H-12; SH-10. I. Concurrent with PIO 507. Focuses on development of assessment component of the family nurse practitioner role. Didactic content taught by a multidiscipline faculty covers common physical, mental, and developmental problems presented by children and adults in ambulatory settings. Supervised practice covers history taking, physical examinations, screening and diagnostic procedures, and interpretation of selected laboratory findings.

NUR 503. Clinical Judgment in Family Nurse Practice. LH-7; CI H-12; SH-10. II. PR: NUR 502 and PIO 507. Concurrent with NUR 500 and PIO 508. Didactic content taught by a multidiscipline faculty continues to increase students' competency in identifying health-illness status of children and adults in ambulatory settings. Supervised practice covers increasing responsibility for accuracy and breadth of assessment and clinical judgments. Practice includes experiences with family nursing where advanced theory on family dynamics, counseling, teaching, and coordination as practiced by the specialist in community health nursing are synthesized with the assessment and clinical judgment skills of the nurse practitioner.

NUR 504. Management of Commonwealth Health Problems of Children and Adults in Family Nurse Practice. LH-1; CI H-20; SH-6. III. PR: NUR 500, 502, 503; PIO 507, 508. Focuses on development of management component of the family nurse practitioner role by assigning students to a physician delivering primary care. The student develops a small caseload of families to manage, to assist family units in developing positive

health behavior, to evaluate responses to management plans, and to experience the degree of dependency-independency required to carry out the role functions of the family nurse practitioner. Seminars cover practice-oriented issues and experiences in role development in practice.

NUR 505. Nurse Practitioner Practicum. LH-1; CI H-8; SH-3. I, II. PR: NUR 500, 501 or concurrent; FNP course sequence. Concentrated study and clinical practice in an area of interest. This may be a clinical experience only or one which integrates the teaching, supervisory or consultant component of the practitioner role.

NUR 513. Practicum in Supervision. LH-1; CI H-8; SH-3. I. PR: third semester standing. Philosophy, purposes, and elements of the social role of the contemporary supervisor as a developer of human resources and as a functioning member of organizational structures taught through selected supervised practice.

NUR 542. Advanced Maternal-Child Nursing. LH-3; CI H-8; SH-5. II. PR: NUR 575. Study of physiological and psychosocial requirements of the family during child-bearing and childrearing. Parent-child relationships are examined in relation to other family members. Maternity nursing: nursing practicum is directed toward the application of selected theories and concepts to the care of women during pregnancy. Nursing of children: nursing practicum is directed toward the application of selected theories and concepts for the maintenance or movement toward optimum growth and development during the preschool years.

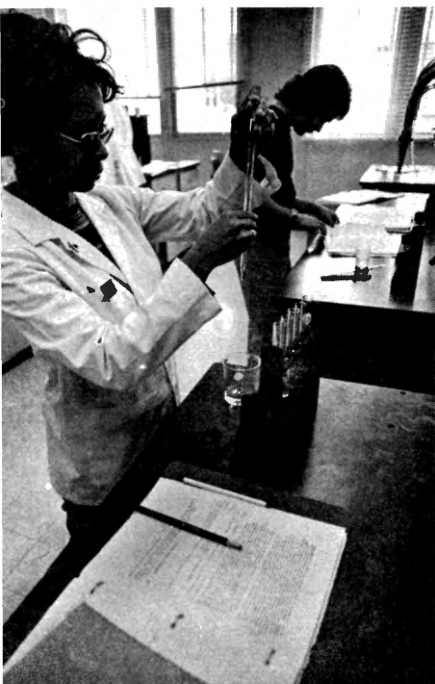
NUR 543. Advanced Maternal-Child Nursing. LH-3; CI H-8; SH-5. I. PR: NUR 575, 542. Theory and practice are directed toward the physiological and psychosocial needs of family members during the intra-partal periods. Nursing of children: theory and practice are directed toward the physiological and psychosocial needs during latency and adolescence in relation to optimum growth and development.

NUR 520. Advanced Medical-Surgical Nursing. LH-3; CI H-8; SH-5. I, II. PR: NUR 575, PIO 507 or equivalent. Theory and practice directed toward nursing assessment and interventions needed by clients and their families.

NUR 521. Advanced Medical-Surgical Nursing. LH-3; CI H-8; SH-5. I. PR: NUR 575, PIO 507, or equivalent. Theory and practice directed toward nursing interventions and resources needed by clients and their families. Factors affecting the implementation of nursing interventions will be incorporated.

NUR 551. Advanced Psychiatric-Mental Health Nursing. LH-2; SH-2. I. Focuses on interpersonal interaction based on a theory of human values in which concepts such as identity, acceptance and esteem, communication, autonomy, and authenticity are stressed. Theory related to systems analysis used to study the milieu. Content provides basis for the care of individual patients and use of the nursing process within the therapeutic community.

- NUR 552. Advanced Psychiatric-Mental Health Nursing.** LH-2; CI H-8; SH-4. II. PR: NUR 551. A continuation of the study of human values and of specific psychiatric nursing concepts such as anxiety and fear. Provides theory dealing with the study of families and family therapy. Clinical practicum provides additional depth in the care of an individual patient and his family and in the care of groups of patients. Practicum may cut across clinical and/or agency boundaries according to individual interest and needs of the student.
- NUR 553. Advanced Psychiatric-Mental Health Nursing.** LH-2; CI H-8; SH-4. I. PR: NUR 551, 552. Focuses on the synthesis of previously learned psychiatric nursing theory and material from related areas in the assessment of community dynamics and potentials as they affect the mental health of persons within the community. Focus of the clinical practicum is upon community living.
- NUR 555. Group Seminar.** LH-1; SH-1. I. Series of group seminars designed to promote theoretical understanding of group dynamics and psychotherapies in terms of objectives and techniques. Opportunities provided for personal growth through sensitivity training. First seminar focuses on experiential learnings of group and self dynamics.
- NUR 556. Group Seminar.** LH-1; SH-1. II. PR: consent. Designed to provide theoretical understanding of such group dynamics as process, content, pressure, and feedback.
- NUR 557. Group Seminar.** LH-1; SH-1. I. PR: consent. Devoted to objectives and techniques involved in the various group psychotherapies, including such groups as supportive, guidance, insight-oriented, encounter, marathon, sensitivity training, couples, and family therapy.
- NUR 571. Teaching Practicum.** LH-1; CI H-8; SH-3. I, II. PR: six credit hours education courses and 10 credit hours nursing courses. Concentrated study in classroom and clinical teaching content. Supervised practice teaching is provided with undergraduate nursing students under the direction of master teachers.
- NUR 573. Selected Clinical Practicum.** LH-1; CI H-8; SH-3. I. PR: methods of research, statistics, 10 credits in nursing courses. Concentrated study and clinical practicum directed toward clinical specialist preparation in the major area of interest.
- NUR 575. Contemporary Nursing.** SH-3-5. I. S. PR: BSN or equivalent degree. A core course developed to provide knowledge of theories, practices, and procedures common to nursing prior to specialization. All graduate students will participate in seminars and planned clinical practice in conjunction with lectures. It is required prior to any course in the area of specialization with the exception of NUR 551 which is taught concurrently.
- NUR 577. Special Topics in Nursing.** SH-1 to 3. I, II, S. PR: 10 semester hours in the major independent study of specific topics in nursing covered briefly in the more general courses.
- NUR 600. Research Seminar in Nursing.** LH-1; SH-1. II. PR: methods of research, statistics, and thesis registration. Examines practical problems in the implementation of nursing research.
- NUR 630. Thesis.** SH-6-12. Required of all students, the master's thesis constitutes carefully planned and executed research under the supervision of an advisor and in conjunction with a thesis committee. The student writes and presents the required thesis in the area of clinical nursing interest.



SCHOOL OF BASIC SCIENCES

ADMINISTRATIVE OFFICERS

Daniel T. Watts, Ph.D.

Dean

Charles C. Clayton, Ph.D.

Assistant Dean

HISTORY

Basic sciences have historically been an integral part of the curriculum of medicine, dentistry, pharmacy, nursing, and allied health fields. In the earlier years of this university, the basic sciences departments were administered by the School of Medicine with the dean of that school working with a committee of deans to establish policy for the teaching of the basic sciences in the several professional schools. In 1966, by the action of the Board of Visitors, a separate School of Basic Sciences and Graduate Studies was established and a dean was appointed as administrative head of the school. In 1974, with the establishment of a university-wide graduate program, it became the School of Basic Sciences. The M.S. and Ph.D. programs at MCV/VCU continue to be administered through the dean of the School of Basic Sciences who serves as chairman of the Graduate Council in close cooperation with other schools on the MCV Campus.

PROGRAM

All departments in the School of Basic Sciences provide instruction in their disciplines for students in the other schools, on the MCV

Campus. By developing large, strong departments with a good balance of faculty, post-doctoral fellows, and graduate assistants, it is possible to provide quality instruction for all the health profession schools, and to maintain strong research, M.S., and Ph.D. programs; including combined M.S. or Ph.D.; M.D. or D.D.S. programs.

Information on procedures and policies for graduate studies are listed in a separate section (See pages 132-138.)

INTEGRATED CURRICULUM—SCHOOL OF MEDICINE

All basic sciences departments are involved in teaching the integrated curriculum in the School of Medicine. The teaching (lectures, conferences, and laboratories) amounts to the following semester hours by departments: anatomy (including gross, microscopic, and neuroanatomy)—16; biochemistry—6; biostatistics—1; genetics—2; microbiology—6; pharmacology—6; and physiology—9. Microbiology and pharmacology are taught mainly in the M-II year while the other disciplines are emphasized in the M-I year. In addition the basic sciences departments offer electives which are available to the medical students throughout their curriculum but primarily in their fourth year.

INTERDEPARTMENTAL BASIC SCIENCES COURSES

Certain courses are taught by two or more departments.

BAS 361. Health Science I. LH-6; Lab H-3; SH-7. I. This course provides nursing and dental hygiene students with a basic understanding of anatomy, physiology, nutrition, and biochemistry. The didactic part of the course is supplemented by weekly laboratory sessions for the study of microscopic and gross anatomy and the observation and use of equipment for measuring physiological activity.

BAS 362. Health Science II. LH-3; SH-3. II. PR: BAS 361, MIC 365. Integrates and correlates pathophysiology, pharmacology and therapeutics, pathogenetics, and nutrition in the disease state. Areas of discussion include water and electrolyte imbalance, acid-base imbalance, fever, pain, edema formation, shock, and blood alterations.

BAS 463. Health Science III. LH-3; SH-3. I. PR: BAS 362. Builds upon BAS 362 concepts and continues the integration of pathophysiology, pharmacology and therapeutics, pathogenetics, and nutrition in more specific pathologies such as autoimmune diseases; infection; allergy; neoplasia; cardiovascular, hematopoietic, musculoskeletal, nervous system, pediatric, geriatric, and pathophysiology; and metabolic and nutritional diseases.

BAS 504. Neurosciences (Dentistry). LH-3; Lab H-1; SH-4. II. An integrated study of the human nervous system from anatomical, physiological, and pharmacological points of view with clinical implications. Emphasis is put on the brain and spinal cord.

BAS 575. Instructional Media and Methods. LH-1; Lab H-2; SH-2. I. Introductory survey of audiovisual techniques and materials. Planning and production of simple visuals, including illustrations for manuscripts and lectures. Practical application is emphasized, including proper selection of media and use of equipment.

Biology of Cancer. (Previously designated BAS 517). An interdisciplinary course now listed as PMC 514.

COURSES OF INSTRUCTION

Department of Anatomy

Professors: Jollie (Chairman); Astruc; Burke, G. (Dentistry)¹; Burke, J.; Odor; Seibel

Emeritus Professors: Hegre; Ingersoll; Shanklin

Associate Professors: Harris; Johnson; Jordan;

Norvell; Owers; Snodgrass

Adjunct Associate Professor: Sheppard

Assistant Professors: Bryant (Surgery); Geeraets,

R. (Ophthalmology); Goldberg; Haar;

Hightower; Jackson; Krieg; Leichnetz; Lieb;

Mcclung; Pakurar; Povlishock; Quattropan

Instructor: Mong

ANA 302. Principles of Human Anatomy (Pharmacy). LH-3; Lab H-3; SH-4.5. II. The structure of the human body is surveyed by organ systems which are studied at several levels of organization. Emphasis is placed on

basic concepts and their application to various body components.

ANA 305. Embryology (Physical Therapy). LH-1; SH-1. I. A study of the development of the form of the human body emphasizing structural and developmental relationships between the musculoskeletal and nervous systems.

ANA 501. Microscopic Anatomy (Dentistry). LH-3; Lab H-6; SH-6. I. A study of the normal tissues and organs of the human body at the microscope level, with emphasis on the histological organization and development of the oral cavity.

ANA 502. Gross Anatomy (Dentistry). LH-3; Lab H-9; SH-7.5. II. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

ANA 503. Introduction to Facial Growth and Development (Dentistry). LH-2; SH-2. I. This is a conjoint effort with the Departments of Anatomy, Pedodontics, Orthodontics, Periodontics, and the Division of Occlusion participating. Its purpose is to introduce the dental student to the child patient in his first year and to provide him with knowledge on the sites of facial growth and important anatomical landmarks used in the clinic.

ANA 505. Anatomy of the Head and Neck (Dentistry). LH-2; Lab 4-H; SH-3. I. PR: ANA 502. The course provides a comprehensive review of head and neck anatomy with application to clinical conditions. It is of special interest to junior dental students and others concerned with detailed knowledge of the head and neck.

ANA 506. Head and Neck Anatomy (Dental Hygiene). LH-3; Lab H-9; SH-3.0. An overview of head and neck anatomy with emphasis on oral structures. Lectures and laboratory with ANA 502 for one month.

ANA 507. History of Anatomy. LH-1; SH-1. I. (Alt. yrs. '77-'78) Assigned readings and lectures on the historical development of anatomical knowledge. Prescientific era to the present time will be covered in the course.

ANA 509. Gross Anatomy. LH-3; Lab H-12; SH-9. I. (Alt. yrs. '76-'77) A graduate level, in depth study of human anatomy at the gross level. Though intended primarily for graduate students in anatomy, this course will prove useful for all graduate students desiring a thorough knowledge of human gross anatomy.

ANA 510. Neuroanatomy. LH-4; SH-4. II. An in depth study of the structure, connections, and function of the central nervous system. ANA 510 and 512 constitute a complete graduate level neuroanatomy course.

ANA 511. Microscopic Anatomy. LH-3; Lab H-6; SH-6. II. (Alt. yrs. '77-'78) A graduate level, in depth study of human anatomy at microscopic and fine structural levels.

ANA 512. Neuroanatomy Laboratory. Lab H-2; SH-1. II. (Alt. yrs. '76-'77) PR: ANA 510. (concurrently or equivalent.) A complement of ANA 510 which trains the student to study the central nervous system through the

¹ Department in parentheses indicates joint appointment.

use of literature and actual gross and histological preparations.

ANA 513. Advanced Studies in Anatomy. LH-3; Lab H-6; SH-6. I. An in depth course in specific areas of anatomy: histology, gross anatomy, and neuroanatomy.

ANA 514. Techniques in Electron Microscopy. LH-2; Lab H-6; SH-5. II. PR: ANA 501. Students are taught the basic techniques and theories of ultra-microtomy and electron micrography, as well as the use of the electron microscope.

ANA 590. Anatomy Seminar. LH-1; SH-1. I, II. This course is a joint effort by the faculty and graduate students of the Department of Anatomy. Reviews and reports of original research and significant advances in the basic medical sciences are submitted.

ANA 600. Fine Structure of Cells and Tissues. LH-5; SH-5. II. (Alt. yrs. '77-'78). PR: histology. A seminar-conference course in interpretive electron microscopy. The ultra-structural features of cellular elements and tissues are discussed in the light of the most recent research in the field of cell biology.

ANA 602. Embryology. LH-3; Lab H-9; SH-6. II. (Alt. yrs. '76-'77) PR: ANA 509 or equivalent. The lecture portion of the course will cover a variety of individual topics of contemporary interest given by authorities in the particular fields. They will emphasize the historic and classic aspects of the topic as related to current research in the concerned fields. An in depth study of the morphogenesis of each major organ system using prepared slides of hamster embryos and human materials will constitute the laboratory portion of the course.

ANA 690. Research in Anatomy. SH-1-15. I, II, S.

Department of Biochemistry

Professors: Abbott (Chairman); Banks; Clayton;

Gander (Pathology)¹; Higgins; Liberti;

Rothberg (Dermatology); Swell*

Emeritus Professor: Forbes

Associate Professors: Bond; Brandt; Collins;

DeVries; Kline; Rogers; Shelton

Assistant Professors: Bhatnagar (Obstetrics and Gynecology); Diegelmann (Surgery);

Eanes (Pediatrics); Evans; Grogan;

Jamdar (Medicine); Van Tuyle

Lecturer: Young (Pathology)

BIC 302. Biochemistry (Pharmacy). LH-4; Lab H-3; SH-5. II. PR: PHC 301 and 311 or equivalents. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as a part of the fundamental background of modern pharmacy.

BIC 304. Biochemistry (Undergraduate). LH-3; SH-3. II. PR: CHE 301-302 or equivalent. A presentation of structural biochemistry, intermediary metabolism, and nutrition (lectures with BIC 302). Undergraduate students desiring biochemistry laboratory with lectures

should enroll in BIC 302. Permission of instructor required.

BIC 501. Biochemistry (Dentistry). LH-4; Lab H-2; SH-5. I. PR: organic chemistry. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as part of the fundamental background of modern dentistry.

BIC 503. General Biochemistry. LH-5; SH-5. I. PR: eight credits organic chemistry. A comprehensive introductory course for graduate students. BIC 503 and 505 constitute the complete introductory course.

BIC 505. Experimental Biochemistry. Lab H-8; SH-4. I. PR: BIC 503 (or concurrent) or equivalent, quantitative chemistry. Laboratory work, including theory and practice of biochemical research methods.

BIC 510. Biochemical Preparations. SH-2; per preparation. I, II, S. A study of some of the more common biochemical substances by comprehensive written review of the literature and by preparations from biological material.

BIC 590. Biochemistry Seminar. SH-1. I, II. Reports on recent biochemical literature and research by students and staff.

BIC 601. Lipids. LH-2; SH-2; I. (Alt. yrs. '75-'76). PR: BIC 503. Selected advanced topics in the chemistry and metabolism of lipids.

BIC 602. Proteins. LH-2; SH-2. II. (Alt. yrs. '76-'77). PR: BIC 503. Biochemistry of proteins.

BIC 603. Nutritional Biochemistry. LH-2; SH-2. I. (Alt. yrs. '76-'77). PR: permission of instructor. Advanced study of chemistry and biochemical mechanisms of vitamin function; experimental and practical aspects of nutrition.

BIC 604. Enzymology. LH-3; SH-3. II. (Alt. yrs. '76-'77). PR: BIC 503. Mechanisms and kinetics of enzyme catalysis.

BIC 606. Controls of Metabolic Processes. LH-2; SH-2. II. (Alt. yrs. '77-'78). PR: BIC 503 and permission of the instructor. An advanced course on mechanisms by which metabolic processes are controlled.

BIC 690. Research in Biochemistry. SH-1-15. I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for students in the professional schools.

Department of Biophysics

Professors: Weglicki (Chairman); Geeraets, W. (Ophthalmology);¹ Ham

Associate Professors: Clarke; Cleary; Epstein;

O'Neal; Owens

Assistant Professors: Franson; Ruth; Williams; Wist

(Computer Center)

Instructor: Campbell

BIP 302. Physics for Nurse Anesthetists. LH-3; SH-3. II. An introductory course in physics oriented towards the needs of nurse anesthetists, including applications to situations encountered in the operating room and extensive practice at mathematical problem solving.

¹ Department in parentheses indicates joint appointment.

*McGuire VA Hospital

BIP 500. Introduction to Biophysics. LH-4; SH-4. Required course for first-year graduate students in biophysics. Principles of atomic and nuclear physics, spectroscopy, ions in solution, molecular structure, thermo-dynamics, and principles of interaction of physical with biological systems are stressed.

BIP 501. Radioisotopes. LH-3; Lab H-2; SH-4. I. Elements of nuclear physics, statistics of counting, radiation dosimetry, health physics, radiation protection, tracer, and radiographic techniques.

BIP 502. Applied Electronics in Biology and Medicine. LH-2; Lab H-2; SH-3. II. (Alt. Yrs. '77-'78). Fundamental principles and applications of electronics as related to biological sciences.

BIP 504. Computer Technology in the Biomedical Sciences. LH-2; Lab H-2. II. Research and clinical applications of automatic and semi-automatic data acquisition systems: data collection, transmission and processing of data, display and storage of data, and automatic control of instruments.

BIP 510. Advanced Biophysics. LH-4; SH-4. I and II (Alt. yrs. '77-'78). PR: thermodynamics and physical chemistry, calculus, and elementary physics. Introduction to statistical mechanics and quantum mechanics.

BIP 522. Circuit Design and Analysis. LH-3; SH-3. II. (Alt. yrs. '76-'77). PR: college physics, calculus. Emphasis is placed on the understanding in depth of the analysis and design of electronic circuits. Designed to meet the needs of quantitatively oriented students.

BIP 524. Biophysical Optics. LH-2; SH-2. I and II. (Alt. yrs. '76-'77). PR: Calculus and elementary physics. First semester deals with theories of optical physics. Second semester will cover principles of photochemistry and photobiology.

BIP 590. Seminar. LH-1; SH-1. I, II. Research reports from members of the staff, discussion of special topics, and lectures by visiting speakers. Participation and at least one presentation each semester by each registered graduate student.

BIP 601. Biophysical Principles LH-4; SH-4. I and II. (Alt. yrs. '76-'77). PR: BIP 500. First semester includes the basic mathematical theory of X-ray crystal structure analysis including techniques and methods of solving structure of crystals. Detailed discussion of the crystalline structure of several biological molecules. Second semester will include in depth discussions of the theories covering the techniques used in studying biological macromolecules in solution.

BIP 602. Molecular Biology. LH-4; SH-4. II. PR: undergraduate biology and/or chemistry. Chemistry of nucleic acids; protein synthesis; molecular genetics and control; membrane biophysics; molecular basis of disease.

BIP 604. Biophysical Techniques. LH-2; Lab H-2; SH-3. II. Demonstrations will be undertaken in the laboratory and will include: cell separation techniques, methods of analysis of tissue extracts, chromatography, liquid scintillation counting, electron microscopy, spectroscopy including nuclear magnetic and electron spin

resonance, biophysics of membranes, and statistical analysis.

BIP 690. Research in Biophysics. SH-1-15. I, II, S. Opportunities are available for graduate students to conduct original investigations under the supervision of members of the staff in molecular biology of myocardial infarction, muscular dystrophy and lysosomes of phagocytic cells, radiobiology, biological effects of thermal and laser radiation, and other areas of quantitative research on living systems at the molecular level.

Department of Biostatistics

Professors: Kilpatrick (Chairman); Minton (Arts and Sciences)¹

Associate Professors: Carter; Flora

Assistant Professors: Fellner; Meydrecht

BIS 511-512. Methods of Statistical Analysis. LH-3; SH-3. (This is a two-semester sequence. However, BIS 511 may be taken without taking BIS 512.) Basic concepts of statistical methods, statistical measures, variation, distributions, tests of significance, simple nonparametric tests, analysis of variance, concepts of experimental design, regression, correlation; analysis and design of factorial experiments, Latin squares and others; effects of blocking fractional replication, and confounding.

BIS 521. Statistical Principles of Health Care Information. LH-3; SH-3. I. (For students in hospital and health administration; graduate students in nursing; others with consent.) A basic introduction to the nature, use, and analysis of hospital and health-care statistics. The collection, presentation, tabulation, and interpretation of statistical data. Classification of measurements and observations, properties of rates, ratios, and indices. Some typical statistical distributions. The use of measure of location and dispersion to describe a distribution. 'Normal' variation and outliers. The elementary laws of probability. The concept of a sampling distribution, the standard error of the mean and confidence limits in large and small samples, and tests of significance.

BIS 522. Operations Analysis. LH-2; Lab H-2; SH-3. PR: BIM 521 or equivalent. (For students in hospital and health administration; others by consent.) Review of the philosophy, concepts, and procedures of operations research and the problems of derivation and implementation of operations research solutions in health care. Forecasting. Applications of quality control and decision making to hospitals.

BIS 537. Sampling. LH-3; SH-3. I. (Alt. yrs. '76-'77). An introduction to the theory and methods of sampling and sample surveys including random, stratified, systematic, and probability sampling, estimation of sample sizes, ratio and regression estimates, and analytical surveys.

BIS 538. Epidemiology and Population Research. LH-3, SH-3. I. (Alt. yrs. '77-'78). Sources of vital statistical data—review of the binomial, poisson, negative bino-

¹Department in parentheses indicates joint appointment.

mial distributions as they apply to vital events; summary statistics, rates, ratios, and others; direct and indirect standardization; abridged life tables; principles of epidemiology; interpretation of analytical surveys; problems in the analysis of observational studies in health care and public health; causality; inferences; path analysis; modeling; and crucial observations.

BIS 546. Linear Statistical Models. LH-3; SH-3. II. PR: STA 513. Distribution of quadratic forms under normal theory; general linear model of full rank and less than full rank, Gauss-Markov theorem; estimability.

BIS 547. Nonparametric Statistics. LH-3; SH-3. I. (Alt. yrs. '77-'78) Theory of distribution-free and order statistics with emphasis on estimation and hypothesis testing.

BIS 590. Biostatistics Seminar. LH-1; SH-1. I, II. Talks by the students, faculty, and visitors describing recent research or reviewing topics of mutual interest.

BIS 600. Special Topics in Biostatistics. SH-1-4. I, II. The faculty (including visiting and adjunct professors) from time to time offer courses in newly developing areas of statistics and biometry. For information, contact the department chairman. LH by arrangement. Lab H by arrangement.

BIS 641. Advanced Statistical Inference. LH-3; SH-3. I (Alt. yrs. '76-'77). PR: STA 514. Concepts of classical decision theory, the Bayesian approach to decision theory, the use of prior information in arriving at decision procedures, empirical Bayesian tests of hypotheses, estimation of parameters, and other applications. In the second half of this course, the theories of estimation and hypothesis testing introduced in STA 514 will be extended.

BIS 642. Methods of Multivariate Analysis. LH-3; SH-3. II. PR: BIS 511, 546. (Alt. yrs. '77-'78). Introduction to the theory and methods of analysis of multivariate data; generalization of standard univariate techniques to the multivariate, unionintersection and likelihood ratio tests; multiple, partial, and canonical correlation; principle component analysis; discriminant analysis.

BIS 650. Design and Analysis of Response Surface Experiments. LH-3; SH-3. II (Alt. yrs. '76-'77). PR: BIS 511 and 546. Philosophy, terminology, and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analyses, description of the response surfaces, rotatability, uniform information designs, central composite in design, and modern design criteria.

BIS 690. Research in Biostatistics. SH-1-15. I, II, S.

For additional related courses, see offerings in mathematical sciences and statistics on the Academic Campus.

Department of Human Genetics

Professors: Nance (Chairman); Young (Pediatrics)¹

Associate Professors: Brown; Cribbs
Mamunes (Pediatrics); Townsend

GEN 501. General Genetics. LH-3; SH-3. I. An introductory course designed to acquaint graduate students with the concepts of genetics.

GEN 503. General Genetics Laboratory. Lab H-2; SH-1. CR: GEN 501. Laboratory experiments that illustrate basic genetic principles.

GEN 504. Biochemical Genetics. LH-3; SH-3. II. PR: biochemistry. The chemical nature of genetic material and its role in cell division and in protein synthesis in both procaryotic and eucaryotic systems.

GEN 506. Biochemical Genetics Laboratory. Lab H-2; SH-1. II. CR: GEN 504. Laboratory techniques used in bacterial and somatic cell genetics.

GEN 507. Medical Genetics. LH-2; SH-2. I. PR: GEN 501 or equivalent. Principles of inheritance and variation in man with particular reference to clinical entities.

GEN 511. Human Cytogenetics. LH-2; SH-2. I. Principles of cytogenetics and the significance of chromosome diseases in man.

GEN 513. Human Cytogenetics Laboratory. Lab H-2; SH-1. I. PR: GEN 511 or concurrent enrollment. Cytogenetic techniques including blood leucocyte cultures, fibroblast cultures, photographic microscopy of chromosomes, and karyotyping.

GEN 516. Population Genetics. LH-3; SH-3. II. Genetic and ecological factors affecting normal and abnormal variation within and between populations of organisms, especially man.

GEN 530. Genetics (Dentistry). LH-1; SH-1. II. The basis of inheritance and variation in man, including simple and complex modes of inheritance, the nature of mutations, human chromosomal aberrations, variation in proteins and antigens, genetic aspects of some syndromes, and birth defects.

GEN 590. Genetics Seminar. LH-1; SH-1. I and II. Selected topics in genetics presented by students and staff.

GEN 590. Special Topics in Genetics. SH-1-4. I and II. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

GEN 690. Genetics Research. SH-1-15. I and II. Research leading to the M.S. or Ph.D. degree; elective research projects for students in the professional schools.

Department of Microbiology

Professors: Bradley (Chairman); Coleman

(Animal Facilities)¹; Dalton (Pathology); Duma (Medicine); Hench (Medicine); Regelson (Medicine); Ruddy (Medicine); Welshimer

¹ Department in parentheses indicates joint appointment.

Emeritus Professors: Knighton; Nelson; Reid
 Associate Professors: Formica; Hsu; Kaplan (Surgery); Madge (Pathology); Morahan; Phibbs; Shadomy, H. J.; Shadomy, S. (Medicine); Tew
 Adjunct Associate Professors: Lambert; Tankersley.
 Assistant Professors: Hylemon; John; Loria; Macrina; Mardon; Munson (Pharmacology); Murray; Sabet; Tang
 Adjunct Assistant Professor: Danforth
 Instructors: Tinnell; Wright

MIC 365. Infection and Immunity (Nursing and Dental Hygiene). LH-2; Lab H-2; SH-3. I. A study of infectious diseases of man with emphasis on the distribution properties and roles of pathogenic microorganisms and the varied responses of the host. Principles of prevention, control, and chemotherapy of infectious diseases are major components of the course. Microbiological procedures that relate to nursing and dental hygiene practice are demonstrated, practiced, and evaluated in laboratory exercises and conferences.

MIC 402. Microbiology (Pharmacy). LH-3; Lab H-3; SH-4 II. A study of the fundamental principles of microbiology with special emphasis on those aspects of the subject that are of importance in pharmacy. Offered in the School of Pharmacy and open to pharmacy students in the junior year; others by permission of the instructor.

MIC 502. Animal Virology. LH-2; Lab H-4; SH-4. II. A comprehensive introduction to animal virology emphasizing the molecular aspects of viral replication, the cellular responses following viral infection, and host-virus interrelationships

MIC 504. Fundamentals of Microbiology. LH-3; SH-3. I. A comprehensive survey of the fundamentals of microbiology including studies of cell composition and structure, growth and cell division, metabolism and its control, microbial genetics, taxonomy, and comparative review of the major groups of microbes including viruses, bacteria, fungi, algae, and protozoa.

MIC 506. Immunobiology. LH-2; Lab H-4; SH-4. II. A survey of immunobiology as a total host response to foreign agents, covering the nature of antigens and antibodies, antigen-antibody reactions, immunocompetent cells, allergic reactions, tumor immunology, transplantation immunology, and immunogenetics. The laboratory is designed to provide students with practical experience, using basic immunologic techniques which may be applicable in research projects and diagnostic laboratories.

MIC 507. Medical Mycology. LH-2; Lab H-4; SH-4. I. A comprehensive study of fungi pathogenic to man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

MIC 508. Bacterial Physiology and Metabolism Laboratory. LH-3; Lab H-18; SH-4. S. (Six weeks). PR: MIC 504 or BIC 503. Laboratory practice in the design, conduct, and evaluation of techniques and methods in common use in bacterial physiology.

MIC 510. Medical Parasitology. LH-2; Lab H-4; SH-4. II. An introduction to the animal parasites of man with emphasis on both the biological and the medical aspects of the host-parasite association.

MIC 512. Sterilization, Disinfection, and Asepsis. LH-; SH-. I or II. A self-instructional, technical course for dental and dental hygienist students. The course covers cleaning and disinfecting of dental instruments and procedures for clinical asepsis in dental practice.

MIC 515. Pathogenic Bacteriology. LH-2; Lab H-4; SH-4. I. A survey of the bacteria that cause infections in man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

MIC 523. Infections and Immunity (Dentistry). LH-1. I. LH-2, Lab H-4; SH-5. II. A lecture and laboratory study of the disease producing microorganisms of man with special emphasis on the roles of microorganisms in oral diseases.

MIC 590. Microbiology Seminar. LH-1; SH-1. I and II. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminar.

MIC 604. Cell Physiology and Metabolism. LH-3 or 5; SH-3 or 5. II. PR: MIC 504. An advanced course on the physiology and metabolism of procaryotic and eucaryotic cells with some emphasis on the regulation of cell functions. Lectures and class discussions will focus on current scientific literature including review articles and original research papers.

MIC 650. Special Topics in Microbiology. SH-1-4. I or II. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

MIC 685. Advanced Immunobiology. LH-1 to 3. SH-1 to 3. Lectures, seminars, and conferences on basic and clinical immunobiology. Emphasis on correlation between clinical syndromes and immunologic pathophysiology, current immunological research, interpreting basic and clinical immunological data, and formulating hypotheses and solving problems of immunological interest. Open primarily to resident housestaff or students with immunology background such as MIC 506.

MIC 690. Research in Microbiology. SH-1-15. I and II. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

Department of Pharmacology

Professors: Harris (Chairman); Blanke (Pathology)¹; Borzelleca; Dewey; King (Psychiatry); Larson; McKennis; Rubin; Wasserman (Medicine); Watts; Woods

Adjunct Professors: Freund (Medicine); May
 Visiting Professor: Silvette
 Emeritus Professor: Ambrose

¹ Department in parenthesis indicates joint appointment.

Associate Professors: Aceto; Bowe;
Egle; Freer; Friedman; Roberts (Medicine);
Rosecrans

Assistant Professors: Adams; Balster; Bath
(State Laboratories); Carchman; Chambers;
Lamb (Medicine); Munson; Patrick

Adjunct Assistant Professors: Franko; Funderburk
Adjunct Instructor: Lujan

PMC 300. Drugs and Their Actions. LH-3; SH-3. I. This is a survey course in pharmacology which includes all the major classes of drug action. Each class is discussed in relation to mechanism of drug action and therapeutic application. Open to all junior and senior undergraduate students at VCU.

PMC 315. Pharmacology of anesthetic drugs I. LH-3; SH-3. I. A presentation of the pharmacology of all primary and accessory drugs in anesthesia practice. Drug interaction, uptake, distribution, metabolism, and excretion are discussed. Designed to provide the student with an in depth understanding of the concepts of pharmacodynamics as they apply to anesthesiology.

PMC 316. Pharmacology of anesthetic drugs II. LH-4; SH-4. II. A continuation of PMC 315.

PMC 402. Principles of Pharmacology (Pharmacy). LH-3; Lab H-2; SH-4. II. The basic principles of pharmacology that apply to drugs in general and a consideration in depth of the absorption, distribution, biotransformation, excretion, and mechanisms of action of these agents. Toxicology, drugs acting on the autonomic nervous system, and drug evaluation also are discussed.

PMC 441. Pharmacology (Dental Hygiene). LH-4, SH-4. I. A didactic course designed to emphasize the principles of pharmacology and the rationale of drug actions, uses, and side effects. A comprehensive study is presented of all classes of drugs with a detailed consideration given to those used in dentistry.

PMC 448. Drug Dependence: Pharmacological and Psychological Aspects. LH-3; SH-3. II. This is a broad survey course in problems of drug use and abuse. The objective is to give the student a basic understanding of the biological principles which mediate the effects of drugs in the body, some information on pharmacology of psychoactive drugs, the psychological and sociological factors in drug dependence, rehabilitation methods, and prevention. (Primarily for non-science junior and senior undergraduate students of VCU; graduate credit may be received with permission of the advisor.)

PMC 501. Pharmacological Agents (Pharmacy). LH-3; SH-3. I. Major classes of therapeutic agents, including specific drugs, discussed in detail. Includes chemotherapeutic, cardiovascular, central nervous system, and endocrine agents. (This is a continuation of PMC 402.)

PMC 509. General Pharmacology and Pain Control. LH-5; Lab H-2; SH-6. I. The basic principles of pharmacology, including mechanisms of absorption, distribution, biotransformation, elimination; dose-response relation-

ships, drug-receptor interactions are presented followed by detailed discussions of the various classes of drugs, with special consideration given to mechanisms of action and upward effects. An introduction to the fundamentals of toxicology. Drugs used in dentistry to control pain and related symptoms are discussed in detail. These include local anesthetics, general anesthetics, analgesics, tranquilizers, and sedatives.

PMC 517. Biology of Cancer. LH-3; SH-3. I. A presentation of the basic aspects of neoplasia with specific blocks devoted to pathology, biochemistry, carcinogenesis, anticancer drugs, and immunology. This is an interdisciplinary course offered primarily by the Departments of Pharmacology, Microbiology, Biochemistry, and Pathology.

PMC 520. Introduction to Pharmacological Research. Lab H-12; SH-4. I, II, S. PR: permission of instructor. Exposure to pharmacological research from many different aspects.

PMC 535. Principles of Toxicology. LH-2; Lab H-2; SH-3. II. The basic principles of the various aspects of toxicology are presented. Correlations of functional, morphological, carcinogenic, teratogenic, and mutagenic responses with biochemical and toxicological lesions are attempted. Toxicological test procedures will be performed. Environmental and industrial toxicology, food and agricultural chemicals, pertinent legislation, and principles of forensic toxicology will also be covered.

PMC 536. General Pharmacology. LH-5, SH-5. I. A comprehensive introductory course in pharmacology for graduate students. Major classes of therapeutic agents and basic principles of pharmacology are discussed.

PMC 542. Introduction to Forensic Toxicology. LH-2; Lab H-4; SH-4. II. (Alt. yrs. '77-'78). Lecture and laboratory exercises in which common poisons and groups of poisons are discussed as to detection, diagnosis, and treatment of poisoning. Laboratory work includes basic principles of analytical toxicology.

PMC 548. Drug Dependence—Pharmacological and Sociological Aspects. LH-3; SH-3. I and II. PR: PMC 402 and 501 or 536. This course will cover the behavioral pharmacological effects of drugs and the impact of drugs and drug users on societies from a sociological point of view.

PMC 590. Pharmacology Seminar. LH-1; SH-1. I, II. Members of the departmental staff, students, and visiting lecturers participate in discussions on topics of current and historical interest.

PMC 625. Biochemical Pharmacology. LH-3; SH-3. I. (Alt. yrs. '77-'78) PR: BIC 503. Selected topics dealing with the activation and inactivation of drugs and the effects of drugs on enzyme systems. Lectures and assigned reading.

PMC 632. Neurochemical Pharmacology. LH-3; SH-3. I. (Alt. yrs. '76-'77). The biochemical and theoretical aspects of the effects of drugs on the central nervous system will be discussed.

PMC 633. Behavioral Pharmacology. LH-3; SH-3. II. (Alt. yrs. '76-'77). Emphasis will be placed on techniques used in behavioral pharmacology and on the effects of drugs on behavior.

PMC 634. Special Topics. SH-1.4. I, II. PR: permission of instructor. Special topics in pharmacology or toxicology covered in less detail in other courses will be studied in depth in this course. To be arranged LH. To be arranged Lab H.

PMC 637. Cardiovascular-Autonomic Pharmacology. LH-3; SH-3. II. (Alt. yrs. '77-'78). Specialized advanced course in the pharmacology of drugs which affect these systems.

PMC 638. Advanced Toxicology. LH-3; SH-3. II. (Alt. yrs. '76-'77). PR: PMC 535 and BIC 403. Biochemical responses to many environmental chemicals which are active at the transcriptional or replicative level are presented. Detailed biochemistry and selective toxicity of anti-cancer drugs are discussed on the macromolecular level. The involvement of microsomal enzyme pathways in long-term toxic responses is related to the mode of action of chemical mutagens and carcinogens.

PMC 639. Drug Development. LH-1, Lab H-4, SH-3. I. (Alt. yrs. '76-'77) PR: PMC 402 and 501 or their equivalents. The principles of drug screening, advanced testing, and procedures necessary prior to the clinical evaluation of new products are described. An emphasis is placed on physiological type procedures used in pharmacology.

PMC 690. Research in Pharmacology. SH-1-15. I, II, S. Intended for advanced graduate students in the Department of Pharmacology.

Department of Physiology

Professors: Briggs (Chairman); Bogdanove;

Edwards; Fabiato; Price

Professor Emeritus: Fischer

Associate Professors: Boadle-Biber; Hess; Mayer;

Mikulecky; Szumski

Assistant Professors: Clamann; Conklin; Corley;

DeSimone; Ford; Hardie; Pittman;

Poland; Ridgway; Solaro; Soulsby;

Stein; Trowbridge; Witorsch

PIO 361. Introduction to Human Physiology. LH-3; Lab H-3; SH-4. I. An introductory course to human physiology based on an analysis of organ systems.

PIO 401. Mammalian Physiology LH-4; Lab H-3; SH-5.5. I. A comprehensive study of the function of mammalian organ systems for students in pharmacy and for graduate students in disciplines other than physiology.

PIO 403. Mammalian Physiology (Physical Therapy). LH-2; Lab H-3; SH-3. I. A comprehensive study of the nervous and cardiovascular systems for students in physical therapy.

PIO 404. Mammalian Physiology (Physical Therapy). LH-2; Lab H-3; SH-3; II. A comprehensive study of the respiratory, renal, gastrointestinal, and endocrine systems for students in physical therapy.

PIO 482. Introduction to Clinical Physiology. LH-4; SH-4. II. An introductory course to clinical physiology.

PIO 502. Mammalian Physiology. LH-4; Lab H-3; SH-5. II. A comprehensive study of the function of mammalian organ systems, except for the nervous system.

PIO 504. Cell Physiology I. LH-5; SH-5. I. A description of the functional properties of cells in terms of physics and chemistry. Topics discussed include cell structure and cytochemistry, bioenergetics, secretion, and transport of material across membranes, excitation, and contractility.

PIO 507. Clinical Physiology. LH-3; SH-3. I. The physiological principles used to interpret the signs and symptoms obtained from patients are systematically developed in this course. Basic principles of cell physiology are introduced before undertaking the study of the neuro, endocrine, and reproductive organ systems.

PIO 508. Clinical Physiology. LH-3; SH-3. II. PR: PIO 507. The physiological principles used to interpret signs and symptoms obtained from patients are developed. The organ systems covered in this course include the gastrointestinal, cardiovascular, respiratory, renal, and acid-base buffering systems.

PIO 530. Special Topics in Physiology. SH-1-4. I, II. PR: permission of the instructor. This course is designed to provide study of specific topics in physiology. The topics offered include neurophysiology, cardiopulmonary physiology, renal-gastrointestinal physiology, and endocrinology.

PIO 551. Graduate Mammalian Physiology II. LH-2-4; SH-2-4. I. Classical concepts and current research problems will be examined in neuro, cardiovascular, and pulmonary physiology.

PIO 552. Graduate Mammalian Physiology II. LH-2-4; SH-2-4. II. Classical concepts and current research problems will be examined in gastrointestinal, renal, acid-base, and endocrine physiology.

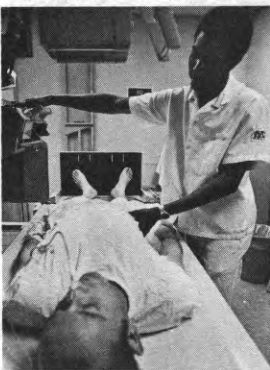
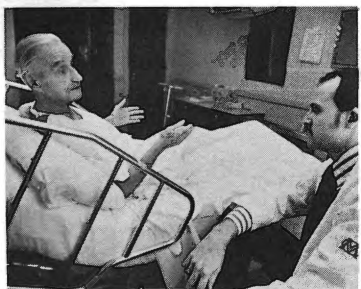
PIO 553. Graduate Mammalian Physiology, Laboratory I. Lab H-4; SH-2. I. This course will permit students to examine, by repetition, some of the classic experiments described in PIO 551.

PIO 554. Graduate Mammalian Physiology, Laboratory II. Lab H-4; SH-2. II. This course will permit students to examine, by repetition, some of the classic experiments described in PIO 552.

PIO 590. Physiology Seminar. LH-1; SH-1. I, II. Reports on current physiological research and problems presented by graduate students, staff, and visiting lecturers.

PIO 606. Mathematical Physiology. LH-3; SH-3. II. Introduction to mathematical techniques used in research. Included will be matrices linear operators, vectors and tensors, partial differentiation, numerical methods, Fourier Series, and La Place transformations.

PIO 690. Research in Physiology. SH-1-15. I, II. S. Research in physiology.



SCHOOL OF ALLIED HEALTH PROFESSIONS

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Jennie D. Seaton, B.A., M.S., Ph.D.

Director, Center for Allied Health Education

The School of Allied Health Professions was established within the Medical College of Virginia of Virginia Commonwealth University on January 1, 1969.

A fundamental reason for the establishment of the School of Allied Health Professions was to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to growing needs for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy, and radiologic technology and X-ray technicians. A program for nurse anesthesia was inaugurated as a separate department in 1969; an existing educational program in occupational therapy located on the Academic Campus was transferred administratively to the School of Allied Health Professions in 1970; and, also in 1970, a teaching program in patient counseling formerly based within MCV Hospitals was integrated with the school. The newest offering, a Bachelor of Science degree with a ma-

jor in health-care management, was introduced in 1973 as a cooperative venture with the School of Business. The enlargement of present programs and the development of future ones in health-related professions is anticipated.

PROGRAMS

Departments and programs currently in this school and the degrees or certificates conferred on their graduates are:

DEPARTMENT OF MEDICAL

TECHNOLOGY

Bachelor of Science in Medical

Technology

Master of Science

DEPARTMENT OF RADIATION

SCIENCES

Associate in Science in Radiologic

Technology

DEPARTMENT OF OCCUPATIONAL

THERAPY

Bachelor of Science in Occupational

Therapy

Master of Science in Occupational

Therapy

PROGRAM OF PATIENT COUNSELING

Postgraduate Certificate in Patient

Counseling

DEPARTMENT OF PHYSICAL THERAPY

Bachelor of Science in Physical Therapy

Master of Science

DEPARTMENT OF HOSPITAL AND HEALTH ADMINISTRATION

Master of Hospital Administration

Bachelor of Science in Health Care
Management
DEPARTMENT OF NURSE
ANESTHESIA
Certificate in Nurse Anesthesiology

PHILOSOPHY

The faculty of the school is committed to offer, through the establishment and maintenance of rigorous standards of excellence, undergraduate and graduate education that will prepare students for professional careers in the several allied health disciplines. Development of professional attitudes, emotional maturity, and ethical behavior in students are vital components of the educational process. It is essential that students gain a deep respect for the dignity of man and the inherent rights of patients and others who receive services. The programs are designed to include not only the development of skills to assure excellence in quality of health care, but also such factual knowledge and experiences that will provide the bases for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources, and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

FACILITIES

Departments and programs in the School of Allied Health Professions are presently housed in Randolph-Minor Annex, the MCV Hospitals-South and West, the Newton House, the Nursing Education Building, the Tompkins-McCaw library, and the Raleigh Building (Academic Campus). A multi-story educational building on the MCV Campus is now in the planning stage. This building will house several components of the School of Allied Health Professions, the School of Nursing, the School of Pharmacy, and the Department of Pharmacology. This facility will permit expanded enrollments in all schools and provide improved and enlarged educational and research areas.

ACCREDITATION

Virginia Commonwealth University and all its component schools are accredited by the Southern Association of Colleges and Schools, the general accrediting agency for colleges in

the region. The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions, and the Virginia Association of Allied Health Professions. All its programs are approved or accredited by the appropriate national professional or educational organizations.

COURSES

Nearly all course offerings in the schools are provided by departments and programs; however, selected graduate courses considered applicable to many students in these programs have been assigned to the School of Allied Health Professions.

AHP 301. Interpersonal Dynamics and Patient Sensitivity. LH-3; SH-3. II. A series of seminars covering a variety of patient feelings, reactions, and personality characteristics.

AHP 330. Special Topics. SH-1-4. I, II, S. PR: permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses. Offered on undergraduate level.

AHP 410/510. Introduction to Gerontology. LH-3; SH-3. II. An overview of the process of aging with attention to physical, psychological, social, economic, and cultural ramifications of age; societal attitudes toward the older population in the United States; evolving programs.

AHP 501. Biological and Physiological Aging. LH-3. SH-3. II. Biological theories of aging; cellular, physical, systemic, and sensory change; health maintenance.

AHP 530. Special Topics. SH-1-4. I, II, S. PR: permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

AHP 573. Teaching in Health Professional Schools. LH-3; SH-3. I. Study of the relationships between allied health education and higher education in general, current essentials and proposed standards in education for the health professions, and theoretical approaches to the implementation of these essentials in both academic and clinical learning. Emphasis will be placed on modes of adapting to future needs of the professions and the role of graduate and continuing education in the professions.

AHP 574. Allied Health Education—Practicum. LH-1; Lab H-4; SH-1-3. I, II, and S. PR: EDU 474. Medical technology, occupational therapy, and physical therapy sections. Preparation, presentation, and evaluation of selected educational experiences in the appropriate undergraduate program.

AHP 581. Administration in the Allied Health Professions. LH-3; SH-3. I. Study of the health delivery systems, administrative processes and techniques, budgeting, and program development.

AHP 582. Supervision in the Allied Health Professions.

LH-3; SH-3. II. Study of the supervisory process and staff development, training in communication and interpersonal skills, and public relations within the health facility.

Courses offered by the School of Education on the Academic Campus are generally oriented to graduate students interested in teaching, administration, or supervision.

STUDENT PERFORMANCE AND BEHAVIOR

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of each student and practitioner is an undeviating acceptance of a professional attitude and pride that will motivate him to adhere to a code of professional ethics and to develop fully his competencies for practice.

Thus, the suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. Standards of conduct are presented in the general information section of this catalog and relate to the students in the School of Allied Health Professions. To assure a quality of educational and clinical preparation for its graduates, the following statement is also promulgated:

"If, in the judgment of the Faculty/Administration of the School of Allied Health Professions, a student is not considered suitable for emotional, professional or related reasons, the student's academic status may be appropriately altered."

If any questions arise regarding standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

Department of Medical Technology

HISTORY

Medical technologists have been trained at MCV since 1932. However, the Department (formerly school) of Medical Technology was not formally established until 1952. The school began as a certificate and/or degree program,

meeting the requirements of the American Medical Association as implemented through the Board of Schools of the American Society of Clinical Pathologists (ASCP). In 1961-62 the certificate program was discontinued, and all students accepted must have previously completed 90 semester hours, which included medical technology prerequisites. Upon completion of the course, the students were awarded a Bachelor of Science in Medical Technology degree.

In 1952 the program was established as six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. From 1952-1967, two classes were admitted each year, but the practice was discontinued because of graduation complications and the small enrollment in the spring classes. This program will be terminated with the graduation of the class of 1975.

Beginning with the 1974 fall term students must have completed 60 semester hours which include medical technology prerequisites. In this program the student completes two semesters of didactic education with lectures and laboratory sessions held in the school, followed by a summer session and two semesters of rotation through clinical laboratories. During the clinical rotation, the student returns to the department for classes in advanced medical technology, basic education, and supervision. Upon completion of the course, the student is awarded a Bachelor of Science in Medical Technology degree.

In 1967, a graduate program for medical technologists was begun. This program leads to a Master of Science degree, with majors in one of the four main disciplines of medical technology; namely, clinical chemistry, hematology, immunohematology, and clinical microbiology. Graduate studies in medical technology are offered for those who would become teachers and supervisors.

PHILOSOPHY

The medical technologist is in a unique position. The area of interest while predominantly intellectual, also requires specialized manual and technological skills.

The university medical center affords the most favorable environment to acquire this varied knowledge.

The faculty is available to provide expertise in all areas; the large hospital provides a wide spectrum of pathological conditions, and the

library is able to fulfill all literature requirements.

Education in close proximity to that of the medical student, intern, and resident, as well as interaction with the other health-related professions gathered into the School of Allied Health Professions, introduces the student to his position as a member of the medical team.

OBJECTIVES

The primary objective of the Department of Medical Technology is to provide the student with superior basic and advanced studies in medical laboratory science.

Most careful attention is given to the development of the professional personality of the medical technologist. A mature, responsible approach to the acquisition of the knowledge of medical laboratory science will establish a pattern for his entire career and provide strong knowledgeable leaders in the clinical laboratory area.

FACILITIES

The department is located on the ground floor of Randolph-Minor Annex at the corner of College and Broad Streets. Thirty students are accepted each year.

The teaching laboratory is well-equipped with the latest equipment used in today's methods of laboratory medicine.

ACCREDITATION

The Department of Medical Technology is accredited by the Council on Medical Education of the American Medical Association in collaboration with the National Accrediting Agency for Clinical Laboratory Sciences. A Bachelor of Science degree in medical technology is granted by Virginia Commonwealth University upon satisfactory completion of the prescribed curriculum. Upon completion of the program, the student is eligible for the national examination given by the Board of Registry of the American Society of Clinical Pathologists. This is not an affiliate program.

UNDERGRADUATE PROGRAM

With the rapid advancement of knowledge in the field of laboratory medicine, the need for highly skilled and knowledgeable medical technologists has been recognized as a national problem. With the establishment of two other programs for laboratory workers (clinical laboratory assistants and medical

laboratory technicians*) to meet the demands for personnel, the graduates of this program become the trouble shooters, problem solvers, and supervisors of all of the employees in the laboratory. Students are required to spend two years in residence.

Applications are accepted upon completion of three semesters of college. Students are admitted in the fall semester and follow the university calendar.

The fall and spring semesters of year one are devoted to lectures and laboratory exercises in: clinical microscopy, hematology, serology, immunology, blood banking, clinical biochemistry, clinical microbiology, and parasitology. The following summer and the fall and spring semesters of the second year, the student technologists learn by precept and performance in a rotating internship in the laboratories of affiliated hospitals.

ADMISSION REQUIREMENTS

To qualify for admission, a candidate must have completed a minimum of 60 semester hours of collegiate training in any college or university approved by a recognized regional accrediting agency. Accredited collegiate training in preparation for the study of medical technology, as for any professional career, should provide the opportunity for broad general education to include English, the social sciences, the arts, and the humanities. On entry to the department, the student must have completed 16 hours of chemistry (8 hours of general, including qualitative, 4 hours of organic, 4 hours of quantitative), 16 hours of biology (8 hours of general, 4 hours of basic human anatomy, 4 hours of human physiology), 3 hours of mathematics, and 6 hours of English. It is strongly recommended that the preparatory course include physics.

Additional information regarding admission requirements or the curricula may be obtained by writing to: Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298.

DEPARTMENTAL ACADEMIC REGULATIONS

The minimum passing grade is "D;" a

*a. Clinical laboratory assistant (CLA) requires one year after high school in an approved hospital-based school.

b. medical laboratory technician (mlt) is a joint community college and hospital program which requires two years; the student receives an A.A. degree.

higher passing grade may be established for students required to repeat any course:

If a student has a passing grade in a course but fails the final examination a re-examination may be given. The passing grade after re-examination cannot exceed a "D." A final grade of "F" precludes further re-examination. The course must be repeated.

Academic promotion is determined by the student evaluation committee. The student is expected to:

1. Maintain a credit ratio of 2.0 or better.
2. Complete satisfactorily all non-credit courses.
3. Have a passing grade in all courses.
4. Exhibit the attitudes and skills deemed necessary to function as a professional medical technologist.
5. Pay all fees.

The clinical education requirements must be completed to the satisfaction of the clinical and academic faculty.

HONORS AND AWARDS

A. D. Williams Award. An annual award may be made, on nomination of the faculty, to a student in each class who demonstrates by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for personal development will be considered. The award is made at the end of the junior and the senior year.

Kupfer Award. This award was given in 1965 in memory of Dr. Henry G. Kupfer who was medical director of the School of Medical Technology from 1952 until his death in 1964. It is given to the senior who is considered to be the best all-around technologist. Through the year he must demonstrate an outstanding sense of responsibility in all phases of medical technology, a keen concern for the patients, and the ability to work with others. He must show a desire for personal and professional growth.

The selection of the student to receive the award is made by nominations from the clinical instructors in the various areas of rotations.

CURRICULUM

	JUNIOR YEAR	Semester Hours
MET 301.	Biochemistry.....	6

MET 302.	Hematology.....	5
MET 303.	Clinical Microscopy.....	2
MET 304.	Parasitology.....	2
MET 305.	Microbiology.....	6
MET 306.	Immunohematology.....	4
MET 307.	Principles of Medical Technology.....	2
MET 308.	Instrumentation.....	3
MET 310.	Introduction to Literature.....	1
MET 312.	Quality Control in the Clinical Laboratory.....	1

Total 32

SUMMER SESSION

MET 430.	Clinical Education.....	6
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SENIOR YEAR

MET 407.	Interpretive Immunohematology.....	2
MET 408.	Interpretive Microbiology.....	2
MET 409.	Interpretive Hematology.....	2
MET 410.	Interpretive Biochemistry.....	2
MET 411.	Principles of Clinical Education.....	1
MET 412.	Principles of Supervision.....	2
MET 425.	Biochemistry Practicum.....	7
MET 426.	Microbiology Practicum.....	7
MET 427.	Clinical Microscopy Practicum.....	4
MET 428.	Hematology Practicum.....	6
MET 429.	Immunohematology Practicum.....	6
MET 432.	Research Paper.....	1

Total 42

FACULTY

Professor: Vennart (Medical Advisor)*
Associate Professor: Izard (Chairman)*
Assistant Professors: Odom; Prentice; Carlo*
Instructors: Sommer*; Klimowski; Sorrento*
Assistant Instructor: Small

COURSES OF INSTRUCTION

MET 301. Biochemistry. LH-4; Lab H-4; SH-6. I. Lecture and laboratory course introducing the chemical reactions that occur in normal and diseased processes of the body. It presents a thorough study of the principles and methods used in testing them.

MET 302. Hematology. LH-2; Lab H-6; SH-5. II. A thorough study of the blood and blood forming tissues including normal and abnormal morphology and a study of the coagulation mechanism. A detailed discussion of the use of radioisotopes in the study of abnormal hematopoiesis.

MET 303. Clinical Microscopy. LH-1; Lab H-2; SH-2. I. A study of the principles and practices of urinalysis, pregnancy test, liver function, kidney function, gastric analysis, and cerebrospinal fluid.

*Graduate Faculty

MET 304. Parasitology. LH-1; Lab H-2; SH-2. II. A study of the life cycle of clinical infections and techniques used for isolation and identification of common parasites found in man.

MET 305. Microbiology. LH-4; Lab H-4; SH-6. I. Fundamental principles of immunology, serological methods used in testing for immunology, serological methods used in testing for immunological reactions, and microbiological aspects of infectious disease. Emphasis is placed on techniques, methods, and differential media used to isolate and identify pathogenic bacteria. Methods of identification of mycology infections of man also are studied.

MET 306. Immunohematology. LH-2; Lab H-4; SH-4; I. Theory and principles of blood banking are introduced, and techniques of cell typing, antibody identification, and component therapy are offered.

MET 307. Principles of Medical Technology. LH-2; SH-2. I. Presentation and discussion of the art of medical technology.

MET 308. Instrumentation. LH-2; Lab H-2; SH-3. II. Basic information in electronics is presented and related to the principles and concepts of instrumentation used in the clinical laboratory.

MET 310. Introduction to Literature. LH-1; SH-1. I. Designed to acquaint the student with the use of the medical library and relevant clinical literature.

MET 312. Principles of Laboratory Quality Control. LH-2; SH-2. II. The basic principles of statistics are presented; their application to data and quality control in the clinical laboratory is emphasized.

MET 407. Interpretive Immunohematology. LH-2; SH-2. I. Advanced study of the principles of immunohematology. Presentation and discussion of problems relating to transfusions.

MET 408. Interpretive Microbiology. LH-2; SH-2. I. Advanced studies in microbiology. Emphasis is placed on the pathogenesis and epidemiology of infectious disease. Includes the application of laboratory data and techniques to present microbiological problems in clinical areas.

MET 409. Interpretive Hematology. LH-2; SH-2. II. Advanced study of the principles of hematopoiesis and their pathophysiological correlation to hematological disorders. Interpretation of morphological findings are correlated with case histories.

MET 410. Interpretive Biochemistry. LH-2; SH-2. II. Advanced study of intermediary metabolism and its relation to pathological disorders. Case histories are utilized to study clinical interpretation of laboratory data with visiting clinicians. Presentation of problems of analysis in the clinical chemistry laboratory is discussed.

MET 411. Principles of Clinical Education. LH-1; SH-1. I. Introduction to the basic principles of educational theories and practice. Emphasis is placed on the application of these in the clinical laboratory.

MET 412. Principles of Supervision in the Clinical Laboratory. LH-2; SH-2. II. Introduction to the basic principles of management and employee relations. Emphasis is placed on the application of these in the clinical laboratory.

MET 425. Biochemistry Practicum. Clock hours, 210; SH-7. I-II. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, students are expected to perform and sign out routine laboratory work.

MET 426. Microbiology Practicum. Clock hours, 210; SH-7. I-II. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the use of procedures by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

MET 427. Clinical Microscopy Practicum. Clock hours, 120; SH-4. I-II. Individual participation in hospital fluid laboratories including day and evening shifts. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

MET 428. Hematology Practicum. Clock hours, 180; SH-6. I-II. Individual participation in hospital hematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

MET 429. Immunohematology Practicum. Clock hours, 180; SH-6. I-II. Individual participation in hospital immunohematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work.

MET 430. Clinical Education. Clock hours, 240; SH-6. S. Supervised clinical experiences in hospitals of less than 400 beds are designed to give the student a broader clinical education. In addition to the application of academically acquired knowledge, this eight week affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel will also be an important aspect of this affiliation.

MET 432. Research Paper. LH-1; SH-1. I-II. PR: MET 310. This course is designed to introduce to the student the fundamentals of scientific writing.

GRADUATE PROGRAM

The Department of Medical Technology offers a program leading to a Master of Science degree in medical technology. It is designed to provide advanced theoretical and practical education to the individual whose aim is to teach, to coordinate a junior college program,

or to serve in administrative or supervisory capacities in the field of medical technology. Students may specialize in one of the following disciplines: clinical hematology, microbiology, clinical chemistry, or immunohematology. The core curriculum was developed by making use of existing courses in medicine, dentistry, and the graduate school. Education and administrative courses have been added to supplement the basic course work.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to the graduate school, the applicant must hold a baccalaureate degree and must be a registered medical technologist, MT (ASCP).

The student should have a minimum of two years' experience since successful completion of the registry examination. Current policy requests that at least one year of the experience of the applicant be in the area of medical technology in which he will specialize. Applications accompanied by a curriculum vitae, should be made to the Dean, School of Basic Sciences, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 175, Richmond, Virginia 23298.

CURRICULUM

	Semester Hours
MET 505. Advanced Hematology	4
MET 510. Interpretative Clinical Hematology	2
MET 580. Supervision and Administration in Medical Technology	3
MET 590. Medical Technology Seminar.....	1
MET 650. Special Topics in Medical Technology	1-4
MET 690. Research in Medical Technology	1-15
Courses in other departments required according to student needs:	
BIY 521. Statistical Principles of Health Care Information	3
AHP 573. Teaching in Health Professional Schools	3
AHP 574. Allied Health Education— Practicum	1-3
HHA 547. Organizational Behavior.....	3
PAT 509. Basic Immunohematology.....	4
PAT 510. Basic Clinical Immunohematology.....	4

PAT 513. Blood Banking Laboratory.....	4
PAT 602. Experimental Pathology of Infectious Disease.....	5
PAT 610. Physiology of Blood Coagulation.....	3
PAT 613. Pathogenesis of Infectious Disease (Viral Agents).....	4
PAT 614. Pathogenesis of Infectious Disease (Bacterial Agents).....	4
M-II 503. Reticuloendothelial System	2
PIO 502. Mammalian Physiology.....	5
GEN 507. Medical Genetics	3
MIC 504. Fundamentals of Microbiology	3
BIC 501. Biochemistry.....	5
BIC 503. General Biochemistry.....	5
BIC 505. Experimental Biochemistry.....	4
BIP 501. Radioisotopes	4
Courses in other departments recommended ac- cording to student needs:	
AHP 581. Administration in the Allied Health Professions.....	3
AHP 582. Supervision in the Allied Health Professions.....	3
PAT 521. Interpretive Clinical Chemistry	1-6
PAT 522. Clinical Chemistry.....	1-6
PAT 606. Biochemistry of Disease	2
GEN 516. Population Genetics	3
GEN 504. Biochemical Genetics.....	3
MIC 505. Immunobiology	4
MIC 507. Medical Mycology	4
ANA 514. Techniques in Electron Microscopy	5

ACADEMIC REQUIREMENTS

The minimum course requirement is 24 hours, although ordinarily more will be recommended. All students are required to participate in the medical technology seminar for a minimum of four semesters. All students who plan to teach or assume supervisory positions are required to spend from eight to 12 hours per week as teaching/administrative assistants. A graduate study conducted under the guidance of an advisor is reported in a thesis. The thesis must be presented in both written and oral form to a thesis committee composed of the student's advisor and three other members. The thesis committee should have at least one member from the department and one member from a department other than medical technology.

Each student must acquire teaching and/or management experience with appropriate course work.

Some financial aid is available through teaching or research activities.

COURSES OF INSTRUCTION

MET 505. Advanced Hematology. LH-4; SH-4. I, II. To enable the student to understand the basis for special procedures used in hematology and their application in differentiating blood dyscrasias.

MET 510. Interpretative Clinical Hematology. LH-2; SH-2. I, II. The aim of this course is to present the principles of hematopoiesis and to study related pathological and pathophysiological correlation of hematological disorders.

MET 580. Supervision and Administration in Medical Technology. LH-3; SH-3. This course is designed for students who will be assuming leadership roles in medical technology. Special emphasis will be placed on the role of the medical technologist in education. Topics to be covered include: curriculum design, laboratory design, including teaching areas; budgeting, interviewing, ordering equipment and supplies, and requirements for accreditation of approved programs for MT, MLT, and CLA.

MET 590. Medical Technology Seminar. LH-1; SH-1. I, II. Presentation and discussion of current research and topics of interest by the departmental faculty, graduate students, and visiting lecturers.

MET 650. Special Topics in Medical Technology. SH-1-4. I, II, S. This course provides for lectures, tutorial studies, and/or library assignments in specialized areas not available in formal courses or research training.

MET 690. Research in Medical Technology. SH-1-15. I, II, S. Research leading to the M.S. degree.

Descriptions of the following courses are found in other sections of this bulletin:

BIS 521. See page 89.
AHP 573. See page 96.
AHP 574. See page 96.
AHP 581. See page 96.
AHP 582. See page 97.
HHA 647. See page 128.
PAT 509. See page 37.
PAT 521. See page 37.
PAT 522. See page 37.
PAT 606. See page 37.
PAT 613. See page 37.
PAT 614. See page 38.
PAT 602. See page 37.
PAT 610. See page 37.
PAT 513. See page 37.

PAT 510. See page 37.
M-II 503. See page 28.
ANA 514. See page 88.
BIC 501. See page 88.
BIC 503. See page 88.
BIC 505. See page 88.
MIC 504. See page 91.
MIC 507. See page 91.
BIP 501. See page 89.
GEN 504. See page 90.
GEN 507. See page 90.
GEN 516. See page 90.
PIO 502. See page 93.

Department of Radiation Sciences

PROGRAM OF RADIOLOGIC TECHNOLOGY

HISTORY

A program in radiologic technology has been offered by MCV/VCU since the 1930's. A one-year program was offered until 1961 when it was lengthened to 24 months. In 1966, a curriculum was approved by the Council on Technologists Affairs of the American College of Radiology and the Southern Association of Colleges and Schools that offered the graduate an Associate in Science degree in radiologic technology.

PHILOSOPHY

The Program of Radiologic Technology is maintained with the highest standards involving the art and science of X-ray technology. We believe in the well-being of our fellow man and the advancement of health science at the Medical College of Virginia of Virginia Commonwealth University. We cooperate with and assist other allied health departments in making the greatest possible contribution to patient care and to the Commonwealth of Virginia.

OBJECTIVES

The Program of Radiologic Technology endeavors to provide an educational atmosphere that will engender in students a desire for learning, excellence in clinical performance, and intellectual curiosity. It strives to maintain an educational environment that keeps abreast of change and new methodology within the fields of radiology and radiologic technology.

FUTURE PLANS

Development of a baccalaureate degree program in radiologic technology, nuclear medicine technology, and radiation therapy technology is now in process. These programs will be offered within the Department of Radiation Sciences.

FACILITIES

The Program of Radiologic Technology is located on the 18th floor of the MCV West Hospital and includes classroom, student lounge, library, and offices. A radiographic laboratory is located at 1008 E. Clay Street and includes facilities for film processing. A small classroom is adjacent to the laboratory for project critiques.

ACCREDITATION

The Program in Radiologic Technology is accredited by the Joint Review Committee on Education in Radiologic Technology. This committee has replaced the Council on Technologists Affairs and is the official accrediting body of the American College of Radiology and the American Society of Radiologic Technologists.

PROGRAMS

An Associate in Science in Radiologic Technology degree is offered by the Department of Radiation Sciences. This program qualifies the graduate to take the national registry examination in X-ray technology.

ADMISSION REQUIREMENTS

Candidates for admission to the program must have completed a minimum of 30 semester hours (45 quarter hours) of prerequisite courses with a minimum grade point average of 2.0 on a 4.0 scale. Applications should be submitted as soon as possible after February 1. Correspondence should be sent to: Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298.

Required courses:

	Semester Hours
Anatomy and Physiology	6
English	6
College Algebra	3
General Psychology	3
Physics—to include properties of matter and basic principles of mechanics, electricity, and magnetism	3
Electives	9

A personal interview is required of all students seeking admission.

ACADEMIC REGULATIONS

Requirements for academic promotion:

1. Minimum "C" average—2.0. A student whose grade point average is below 2.0 will be placed on academic probation. Academic probation status must be removed by the end of the semester, except in unusual circumstances. To continue in the program on academic probation, the student must petition the board, composed of the faculty members, and justify such continuation. Students who fail to re-establish

their eligibility after one semester are subject to immediate dismissal.

2. In addition to maintaining a "C" average, progression to the fall and spring semesters of the program offered at MCV is based on earning a passing grade in all professional courses.
3. A student must demonstrate professional responsibility to the faculty during clinical experience. Students failing to demonstrate sufficient professional responsibility will be subject to dismissal from the school upon recommendation of the board.

HONORS AND AWARDS

E. R. Squibb Award. An annual award may be given to a senior student based on a continuous demonstration of professionalism, competency, and academic achievement. The selection of the student to receive the award is made by nomination from the faculty, students, and staff technologists.

Mallinckrodt Award. An annual award may be given to a junior student based on clinical performance, professionalism, attitude, and academic achievement. The selection of the student to receive the award is made by nomination from the faculty, students, and staff technologists.

A. D. Williams Award. An annual award may be given to the student who has achieved the highest academic average in each class.

Stipend. A stipend is paid beginning with the spring semester of the second year and continues up to graduation.

GRADUATION

Requirements for graduation are in accordance with guidelines set down by the Joint Review Committee on Education in Radiologic Technology. The student must have:

- 64 credit hours minimum
- 2,400 hours minimum of hospital-based practicum

CURRICULUM

First Year		Semester Hours
Prerequisite courses.....		30
Second Year		
RTE 200.	Survey of Medical and Surgical Diseases	1

RTE 201.	Radiographic Procedures I	4	
RTE 202.	Radiographic Procedures II	3	
RTE 203.	Ethics	1	
RTE 204.	Clinical Education (300 hrs.)	2	
RTE 205.	Introduction to Radiography I	3	
RTE 206.	Radiography II	3	
RTE 207.	Radiographic Physics	3	
RTE 208.	Radiation Safety	2	
RTE 209.	Medical Terminology	2	
RTE 210.	Special Radiographic Procedures	2	
RTE 211.	Patient Care	2	
RTE 212.	Nuclear Medicine	1	
RTE 214.	Radiation Therapy	1	
RTE 215.	Professional Writing	1	
		—	—
		16	15

Summer Session

RTE 301.	Clinical Education II (600 hrs.)	3	
		—	—
		3	

Third Year

RTE 302.	Departmental Administration	1	
RTE 307.	Radiographic Quality Control	2	
RTE 303-304.	Clinical Education (1,348 hrs.)	3	3
RTE 305-306.	Physiopathology	1	1
		—	—
		6	5

FACULTY

Assistant Professors: Bell; Kirschner

Instructors: Gerhold (Chairman); Greathouse; Was-
seen

COURSES OF INSTRUCTION

RTE 200. Survey of Medical and Surgical Diseases. LH-1; SH-1. II. To acquaint the student with certain changes that occur in disease and injury and their effect in radiography. An understanding of these should enable the technologist to more intelligently perform patient care and to produce more informative radiographs.

RTE 201. Radiographic Procedures I. LH-3; Lab H-3; SH-4. I. Through lectures and laboratories the student becomes familiar with radiographic positioning in order to demonstrate various anatomical parts and organs. Attention is drawn to the differences found in the same subject but under different conditions. Surface contours and landmarks are stressed for the importance they have in locating the position of deeper structures.

RTE 202. Radiographic Procedures II. LH-2; Lab H-2; SH-3. II. Continuation of RET 201 with emphasis on radiography of the cranium. The student becomes familiar with the various baselines employed and the location of inner structures according to the shape of the cranium.

RTE 203. Ethics. LH-1; SH-1. I. A brief history of the radiology profession, the preliminary code of ethics and conduct for radiologic students, and the basic fundamentals of radiation protection.

RTE 204. Clinical Education I. Clock Hours, 300; SH-2. II. Clinical Experience supervised by faculty and staff radiologic technologists. Students gain practical experience in radiographic techniques and positioning for various procedures in routine, emergency, portable, and operating room radiography.

RTE 205. Introduction to Radiography I. LH-2; Lab H-2; SH-3. I. An introductory lecture and laboratory course covering the production of X-ray, x-ray equipment, filters, beam attenuation and restrictors, grids, intensifying screens, film, film processing, and prime factors of radiograph.

RTE 206. Radiography II. LH-2; Lab H-2; SH-3; II. A detailed lecture and laboratory course covering X-ray tubes, x-ray equipment, grids, intensifying screens, radiographic quality, geometry of the radiographic image, fluoroscopy, image intensifiers, and various charts employed in radiography.

RTE 207. Radiographic Physics. LH-3; SH-3. I. Course designed to provide clear understanding of all sources and uses of medical radiation. Includes the study of radioisotopes, the production of x-rays, the interaction of radioactive material, the units of radioactive exposure and absorbed dose, and the measurement of radiation.

RTE 208. Radiation Safety. LH-2; SH-2. II. To provide maximum safety to patients and personnel, the biological effects of ionizing radiation are taught. Through lecture and demonstration, protective measures employed in diagnostic and therapeutic radiology are taught.

RTE 209. Medical Terminology. LH-2; SH-2. I. An introduction to words and phrases used in radiology and radiologic technology, anatomic descriptive terms and their common abbreviations; prefixes and suffixes and their proper usage.

RTE 210. Special Radiographic Procedures. LH-2; SH-2. II. To acquaint the student with the various specialized procedures performed in radiography, the contrast media used, and the reactions and contraindication to these media.

RTE 211. Patient Care. LH-2; SH-2. I. Designed to acquaint the student with patient care and handling in the radiology department. Aseptic techniques and sterile field are taught. Emphasis is placed on the more critically ill or injured patient and radiographic procedures performed in the presence of a sterile field.

RTE 212. Nuclear Medicine. LH-1; SH-1. II. An introduction to the fundamentals of nuclear medicine, including characteristics of radioisotopes, principles of radiation detection, and use of radiopharmaceuticals in clinical procedures.

RTE 214. Radiation Therapy. LH-1; SH-1. II. Covers use of radiation as a therapeutic agent; includes dosage, superficial, deep, supervoltages, and radioactive materials. Daily record keeping of patient treatments and course of therapy is also included.

RTE 215. Professional Writing. LH-1; SH-1. I. Designed to acquaint the student with professional literature and public speaking by preparing independently a written and oral report on a scientific topic, or by preparing a selected project related to his or her profession.

RTE 301. Clinical Education II. Clock Hours, 600; SH-3. S. Supervised clinical experience in general diagnostic radiography by faculty and staff radiologic technologists. Students gain practical experience in radiographic techniques and positioning for various procedures in routine, emergency, portable, and operating room radiography.

RTE 302. Departmental Administration. LH-1; SH-1. II. Organization, function, supervision, and financial arrangements pertinent to the radiology department. The interrelationship of the radiology department with other departments within the hospital. Methods of film filing and the pathological or teaching film file are discussed.

RTE 303-304. Clinical Education III and IV. Clock Hours, 1348; SH-6. I, II. Clinical experience supervised by faculty and staff technologists. Students gain expertise in all aspects of diagnostic radiography. Course includes a clinical rotation in ultrasonics, nuclear medicine, and radiation therapy.

RTE 305-306. Radiographic Physiopathology I and II. LH-1; SH-1. I, II. Designed to fully acquaint the radiologic technologists with the parameters on which the radiologist bases his diagnosis. Physiology and pathology recorded by the radiographic image, standard and special positioning techniques, additional films, the influence of radiographic techniques, and the necessity for obtaining the best diagnostic studies will be discussed.

RTE 307. Radiographic Quality Control. LH-2; SH-2. I. To teach the student the basic means of performing quality control checks on the x-ray generating equipment, accessory devices used in radiography, manual and automatic film processing, and x-ray beam collimation. The student will be required to do an independent quality control in the areas covered in the course.

Department of Occupational Therapy

"Since the primary focus of occupational therapy is the development of adaptive skills

and performance capacity, its concern is with factors which serve as barriers or impediments to the individual's ability to function, as well as those factors which promote, influence, or enhance performance.

"Occupational therapy provides service to those individuals whose abilities to cope with tasks of living are threatened or impaired by development deficits—the aging process, poverty and cultural differences, physical injury or illness, or psychologic and social disability."*

HISTORY

The program in occupational therapy was initiated at Richmond Professional Institute in 1942.

In 1965 the graduate program leading to a Master of Science degree in basic professional education in occupational therapy was initiated. The School of Occupational Therapy became a department in the School of Allied Health Professions in 1970 with the creation of Virginia Commonwealth University.

PHILOSOPHY

The faculty of the Department of Occupational Therapy is concerned with improving the quality of occupational therapy professional services through education relevant to current consumer needs and the development of student attitudes of commitment to personal and professional competence. Research, community service, and continuing education are viewed as ways to improve professional services and at the same time enhance the quality of the educational program.

The department seeks to provide individualization of educational experiences through a professional curriculum. This curriculum emphasizes experiential learning and provides an integrated education organized around a human developmental frame of reference.

OBJECTIVES

To provide the student with the opportunity to become a competent registered occupational therapist through critical thinking and problem solving experiences.

To provide an environment for the student to develop respect for the dignity and basic needs of individuals, related to present and future health care delivery systems throughout the life span.

*From *Definition and Functions*, American Occupational Therapy Association.

To provide the student with the opportunity to develop skills necessary to evaluate and execute effective treatment in occupational therapy.

FACILITIES

The administrative offices and educational facilities of the Department of Occupational Therapy are located on the Academic Campus in the Raleigh Building, 326 North Harrison Street. The Office of the Dean of the School of Allied Health Professions is located on the Medical College of Virginia Campus.

During the junior and senior years fieldwork assignments are made for students in a wide range of clinics and agencies in the Richmond metropolitan area. A 24-week extended fieldwork requirement will be arranged in approved clinical education facilities throughout the United States.

ACCREDITATION

The undergraduate course of study in occupational therapy at Virginia Commonwealth University was first accredited by the American Medical Association, Council on Medical Education, and the Accreditation Committee of the American Occupational Therapy Association in 1943. The graduate program was accredited in 1966. Both the undergraduate and graduate programs were reaccredited in 1975.

HONORS AND AWARDS

Ann W. Saxton Literary Award. A \$200 annual award is available to an occupational therapy student at VCU. The award is based on the presentation of a manuscript which is, in the opinion of the faculty, worthy of publication in the *American Journal of Occupational Therapy* or a journal of a related science or a topic related to occupational therapy.

A. D. Williams Award. An annual award presented to the student who has achieved the highest academic average in each class.

PROGRAMS

Three courses of study are offered:

1. A curriculum leading to the Bachelor of Science in Occupational Therapy degree, which requires the completion of a minimum of 124 semester credits of work and over 960 clock hours of fieldwork experience. Twelve weeks of the fieldwork clock hours must be continuous.

2. Master's degree program—This program leads to the Master of Science in Occupational Therapy degree and is designed for college graduates who wish to become occupational therapists. This program is two calendar years in length, including a thesis or project plus 960 clock hours of fieldwork experience. Twelve weeks of the fieldwork clock hours must be continuous.
3. A Master of Science degree program for those who are registered occupational therapists—This program is individually designed in special areas of concentration. A minimum of 30 semester hours including a thesis is required.

UNDERGRADUATE ADMISSION REQUIREMENTS

Students wishing to pursue a course of study leading to a Bachelor of Science degree in occupational therapy offered through the School of Allied Health Professions may be admitted after two years of college work. A total of 62 semester credits is required for entrance into the professional curriculum. Preference will be given to students who exhibit good potential for occupational therapy. An interview by members of the Admission's Committee is required in addition to other criteria.

Prerequisites for Admission

English	6 semester hours	
Biological Sciences	12 semester hours	Must include laboratory courses in human physiology and anatomy
Psychology	12 semester hours	Must include Developmental Psychology and Psychology of Personality
Sociology	6 semester hours	

These are considered minimum requirements. Students are encouraged to pursue further study in biology, psychology, and sociology.

Correspondence relating to the curriculum in occupational therapy should be addressed to: Chairman, Department of Occupational Therapy, Virginia Commonwealth University, 901 West Franklin Street, Richmond, Virginia 23284.

For application to the professional curriculum and catalog, requests should be addressed to: Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298.

CURRICULUM

Each academic session has as a prerequisite successful completion of all preceding academic work.

JUNIOR YEAR, FIRST SEMESTER

	Semester Hours
BIO 465. Functional Human Anatomy	4
OCT 301. Communications I	3
OCT 305. Human Development and Dysfunction I	3
OCT 307. Development Modalities and Occupational Therapy Function I	4
OCT 309. Skills Laboratory I	2
	16

JUNIOR YEAR, SECOND SEMESTER

BIO 429. Neuroanatomy	3
OCT 302. Communications II	3
OCT 306. Human Development and Dysfunction II	3
OCT 308. Developmental Modalities and Occupational Therapy Function II	4
OCT 310. Skills Laboratory II	2
	15

SUMMER

OCT 450. Fieldwork	6-9
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SENIOR YEAR, FIRST SEMESTER

OCT 405. Human Development and Dysfunction III	6
OCT 407. Developmental Modalities and Occupational Therapy Function III	6
OCT 409. Skills Laboratory III	2
OCT 411. Community Resources	3
	17

SENIOR YEAR, SECOND SEMESTER

OCT 412. Administration and Supervision of Occupational Therapy Services	3
OCT 414. Research Methods in Occupational Therapy	3

OCT 416. Special Topics in Occupational Therapy	4
OCT 452. Fieldwork	6
	16

SUMMER

OCT 460. Fieldwork	6-12
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ACADEMIC REGULATIONS

To continue in the undergraduate occupational therapy curriculum students are expected to:

1. Maintain a grade point average of 2.0 in all undergraduate work
2. Receive a passing grade and maintain a 2.0 grade point average in all required courses
3. Pay all fees
4. Maintain personal attributes and behavior which are consistent with admission criteria
5. Complete clinical education requirements to the satisfaction of clinical and academic faculty

A student who does not meet these standards may continue only with the recommendation of the departmental faculty.

Graduate students must maintain an overall grade point average of 3.0. A student whose average falls below that point or who earns a "D" or "F" in any required course may continue only with the recommendation of the departmental graduate committee. All other requirements listed above for undergraduate students apply also to graduate students (3, 4, and 5 above).

Although arrangements are made in advance, each undergraduate and graduate student is reviewed prior to placement in field work education. The student must have satisfactorily completed the courses prerequisite to that field work experience. He must also demonstrate the maturity, stability, professional attitude, and behavior which are essential for him to benefit from, and perform adequately in the placement.

GRADUATE PROGRAM

The Department of Occupational Therapy offers a program leading to a Master of Science in Occupational Therapy degree for qualified students who have earned a bachelor's degree in a related field. Since major revision of this program is in process, curriculum plans are still tentative.

Admission Requirements

Admission to the graduate program in occupational therapy requires completion of a bachelor's degree from an accredited university or college. Applicants should have maintained a minimum grade point average of 2.5 based on a four-point scale. Exceptions to this standard may be made for applicants who present satisfactory evidence of their potential to undertake graduate study.

Applicants for this program should complete the following prerequisites prior to admission:

English	6 semester hours
Biological Sciences	6 semester hours (must include Human Physiology with lab; Human Anatomy with lab strongly recommended, but students without coursework in anatomy will be advised to do independent study)
Psychology	12 semester hours (must include Developmental Psychology and Psychology of Personality)
Sociology	6 semester hours
Statistics	3 semester hours

These are considered minimal prerequisites, and applicants are encouraged to pursue additional study in biology, psychology, and sociology. Also, coursework or the ability to perform and teach activity skills (such as arts and crafts, music, recreation, work, and homemaking) and experience in occupational therapy or human service agencies are desirable. Admission is selective, since the number of applicants exceeds the number of students who can be enrolled.

Applicants for admission will be required to submit an official transcript from each institution attended, an application form and a non-refundable \$10 application fee, reference forms, and an official report of scores on the Graduate Record Examination Aptitude Test. The deadline for completed applications is February 1. After that date applications can be considered only if there is space available for additional students.

For further information and application materials, contact the Graduate Admissions Committee, Department of Occupational Therapy, Virginia Commonwealth University, 901 West Franklin Street, Richmond, Virginia 23284.

CURRICULUM PLAN

The total program is planned for completion in two calendar years of full-time study and encompasses academic and field work education as well as a research project. Each academic session has as a prerequisite successful completion of all preceding academic work.

FIRST YEAR, SUMMER

	Semester Hours
BIO 565. Functional Human Anatomy	5
BIO 529. Neuroanatomy	3
OCT 500. Basic Treatment Concepts and Skills	2
	<hr/> 10

FIRST YEAR, FALL SEMESTER

OCT 505. Development and Dysfunction I	5
OCT 507. Treatment Theory and Practice I	6
OCT 509. Activity Theory and Skills I	2
OCT 511. Influences on Health and Health Care I	2
	<hr/> 15

FIRST YEAR, SPRING SEMESTER

OCT 506. Development and Dysfunction II	5
OCT 508. Treatment Theory and Practice II	6
OCT 510. Activity Theory and Skills II	2
OCT 512. Influences on Health and Health Care II	2
	<hr/> 15

SECOND YEAR, SUMMER

OCT 600. Field Work Education I	9
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SECOND YEAR, FALL SEMESTER

OCT 601. Research Methods in Occupational Therapy	3
OCT 603. Administration and Supervision of Occupational Therapy Services	3
OCT 650. Special Topics in Occupational Therapy	3
	<hr/> 9
OCT 660. Field Work Education II	3
	<hr/> 12
OCT 691. Research in Occupational Therapy	3

SECOND YEAR, SPRING SEMESTER

OCT 692. Research in Occupational Therapy3

FACULTY

Professor: Maurer (Associate Chairman)
Associate Professors: Bearden; Wolfe
Assistant Professors: Brollier; Osorio; Saxton
Instructors: Hopkins; Nelson; Stone

COURSES OF INSTRUCTION

BIO 429. Neuroanatomy. LH-2; Lab H-2; SH-3. II. PR: BIO 305. A study of the morphology and functional aspects of the central and peripheral nervous system of the human body.

BIO 465. Functional Human Anatomy. LH-3; Lab H-3; SH-4. I. PR: BIO 205 or equivalent. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Particular emphasis is placed upon the study of the extremities. Intended primarily for majors in occupational therapy; not applicable to the major in biology.

OCT 301. Communications I. LH-3; SH-3. I. This course is designed to introduce the occupational therapy student to the following: patterns of health care in the United States and abroad, health care crises, the allied health professions, and the scope and functions of occupational therapy. Use of medical terminology in occupational therapy is explored. The necessity of a knowledge of these areas for adequate professional communication is stressed.

OCT 302. Communications II. LH-3; SH-3. II. This course is designed to introduce the occupational therapy student to the following: elements of effective communication in inter-personal relationships, non-verbal communication, problem solving techniques, techniques of information gathering (documentary search, observation, questionnaires, interviewing), and information giving (oral and written communications). The necessity of knowledge of these areas for appropriate professional communication is stressed.

OCT 305. Human Development and Dysfunction I. LH-3; SH-3. I. A study of developmental influences, from fetal stages through childhood, as related to neuromotor, perceptual-cognitive (sensory integration), socio-cultural, and psychological-behavioral theories. Normal development is contrasted to pediatric conditions of dysfunction as seen in medical, educational, and community settings.

OCT 306. Human Development and Dysfunction II. LH-3; Lab H-1; SH-3. II. Study of adolescent developmental tasks as they lead to goal setting and career planning, coping mechanisms and psychopathologies, and specific physical pathologies of adolescence.

OCT 307. Developmental Modalities and Occupational Therapy Function I. LH-2; Lab H-4; SH-4. I. This course is structured to guide the occupational therapy student in an exploration of those activities, materials, and settings which promote normal growth. Application of developmental stimulation and therapy princi-

ples is studied to parallel OCT 305. Assigned fieldwork is a major portion of this course.

OCT 308. Developmental Modalities and Occupational Therapy Function II. LH-2; Lab H-4; SH-4. II. This course will provide the occupational therapy student with evaluative measures and systems to analyze physical and psychosocial dysfunction. It will also include those techniques and material utilized by occupational therapists to provide adaptation to disability.

OCT 309. Skills Laboratory I. Lab H-3; SH-2. I. Independent self instruction of minor crafts in a developmental sequence from infancy through geriatrics. Lectures in activity analysis, activity adaptation, and mechanical drawing.

OCT 310. Skills Laboratory II. Lab H-5; SH-2. II. Four units of instruction which orient the student to various types of splints and their construction; upper extremity slings; the nature of work, work evaluation, and adjustment; activities of daily living; adaptive devices; and woodworking skills.

OCT 405. Human Development and Dysfunction III. LH-6; SH-6. I. An introduction to normal functioning and the major physical and psycho-social problems which impair normal development in middle adulthood and old age.

OCT 407. Developmental Modalities and Occupational Therapy Function III. LH-6; SH-6. I. An introduction to treatment principles which can be applied to adults with physical and/or psychosocial dysfunctions.

OCT 409. Skills Laboratory III (Two part course). Lab H-3; SH-1. I. Weaving—an orientation to the two and four harness looms, including the therapeutic application and adaptation. Ceramics—an orientation to various non-wheel ceramic techniques and the therapeutic application.

OCT 411. Community Resources. SH-3; LH-3. I. Given a variety of community health resources, the student will analyze each in terms of its organizational structure, funding sources, purposes, client eligibility, accessibility, and scope of services, and apply principles of occupational therapy in prevention (1) by selecting appropriate sources for client referral, (2) by providing direct services or consultation to an agency, and (3) by demonstrating methods by which occupational therapists can receive services.

OCT 412. Administration and Supervision of Occupational Therapy Services. LH-2; Lab H-3; SH-3. II. Covers the management of human and non-human resources to provide efficient and effective occupational therapy services: the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy fieldwork education.

OCT 414. Research Methods in Occupational Therapy. LH-3; SH-3. II. Covers the steps in the research process: problem definition, literature review, research design and data collection appropriate for occupational therapy, data analysis and interpretation, and research reporting. Emphasizes action research, evaluation research, and development of a research proposal.

OCT 416. Special Topics in Occupational Therapy. SH-4. II. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, or independent study with some opportunity for election and the development of knowledge and skills in a specialized area of occupational therapy.

OCT 450. Field Work. SH-6, or 9.

OCT 452. Field Work. SH-6

OCT 460. Field Work. SH-6, or 9, or 12. Minimum total required for all field work courses, 18 SH. Determination of the amount of credit and permission of the instructor and department chairman must be secured prior to registration for the course.

Supervised field work experiences are arranged in various settings for the application of academically acquired knowledge. Placements will include experiences in prevention, health maintenance, remediation, daily life tasks, and vocational adjustment. Field work settings may include hospitals, rehabilitation centers, school systems, community agencies, penal systems, etc.

Field work experiences are arranged individually. A minimum total of 24 weeks is required. Twelve weeks of this must be spent on a full-time basis. When equivalent time is used, the experience will be appropriate to the learning needs of the student and will meet the stated objectives of the field experience.

When the field work runs over several grading periods, an interim grade of "PR" will be assigned. In the event of failure, the course may be repeated only upon recommendation by the academic and clinical faculty.

Field work must be completed no later than 24 months following completion of the academic phase.

GRADUATE COURSES

BIO 529. Neuroanatomy. LH-2; Lab H-2; SH-3. S. PR: BIO 305 or permission of instructor. A study of the morphology and functional aspects of the central and peripheral nervous systems of the human body.

BIO 565. Functional Human Anatomy. LH-3; Lab H-4; SH-5. S. PR: BIO 205 or equivalent. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Particular emphasis is placed upon the study of the extremities. Intended primarily for students in the Department of Occupational Therapy.

OCT 500. Basic Treatment Concepts and Skills. LH-1. Lab H-2; SH-2. S. Introduces important occupational therapy concepts: the influence of activity on health, the basic occupational therapy process, evaluation, motivation, and learning. Develops skill in observation and interviewing as data gathering methods.

OCT 505. Development and Dysfunction I. LH-5; SH-5. I. A study of developmental processes and influences, from fetal stages through adolescence, in terms of neuromotor, sensory integrative, sociocultural, and psy-

chological behavioral theories. Normal development is contrasted to deviations from the health continuum as seen in medical, educational, and community settings.

OCT 506. Development and Dysfunction II. LH-5; SH-5. II. Starting with early adult years and covering the rest of the life span. Includes age-related and non-age-related disease and disability.

OCT 507. Treatment Theory and Practice I. LH-4; Lab H-4; SH-6. I. Application of the principles of developmental stimulation and developmental therapy will be explored to parallel OCT 505. Activities, materials, settings, and relationships which promote normal growth are studied and utilized in the field work phase, a major portion of this course.

OCT 508. Treatment Theory and Practice II. LH-4; Lab H-4; SH-6. II. Theory, evaluation, and remediation of deficits in motor, sensory, perceptual, cognitive, psychologic, and social functioning related to adult development and dysfunction or unrelated to a specific age group.

OCT 509-510. Activity Theory and Skills I and II. LH-1; Lab H-2; SH-2. I and II. Analysis of student's activity history and skills in areas of play/leisure, self-care, homemaking, and work and development of skill in performing selected activities, including splintmaking. Emphasizes teaching, analysis, and therapeutic application of activities. Also stressed are evaluation and development of client's work, homemaking, and daily living skills.

OCT 511-512. Influences on Health and Health Care I and II. LH-2; SH-2. I and II. The nature of health and illness, the sick role, health care organizations and occupations, organization and financing of health care, trends in health care, and current professional issues.

OCT 600. Field Work Education I. SH-9. S. Twelve-week full-time experience in programs providing occupational therapy services.

Supervised field work experiences are arranged in various settings for the application of academically acquired knowledge. Placements include experiences in prevention, health maintenance, remediation, daily life tasks, and vocational adjustment. Field work settings may include hospitals, rehabilitation centers, school systems, community agencies, camping programs, penal systems, and the like.

In the event of failure, the course may be repeated only upon recommendation by the academic and clinical faculty. Field work must be completed no later than 24 months following completion of the academic phase.

OCT 601. Research Methods in Occupational Therapy. LH-3; SH-3. I. Covers the steps in the research process: problem definition, literature review, research design and data collection appropriate to occupational therapy, data analysis and interpretation, and research reporting. Emphasizes action research, evaluation research, and the preparation of a proposal for a thesis or project. Students with prior course work or experience in research may be permitted to take an elective instead of this course.

OCT 603. Administration and Supervision of Occupational Therapy Services. LH-2; Lab H-2; SH-3. I. The management of human and non-human resources in the provision of efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy fieldwork education.

OCT 650. Special Topics in Occupational Therapy. SH-3. I. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, or independent study with some opportunity for election and development of knowledge and skills in a specialized area of occupational therapy.

OCT 660. Field Work Education II. SH-3. II. Twelve - week full-time experience, or its equivalent, in programs providing occupational therapy services. Further description and regulations for OCT 550 also apply to this course.

OCT 691-692. Research in Occupational Therapy. SH-6. I, II. Completion of research or a demonstration or developmental project related to occupational therapy and a report on the background, design, and results of the study or project.

Program of Patient Counseling

HISTORY

"Patient Counseling" is a relatively new title for the practice of communicating empathic concern, support, and sensitive counsel to the physically or emotionally troubled person, and assisting him through the traumas of life. There is a long history of a concerted effort toward this end at the MCV Hospitals of Virginia Commonwealth University. With the appointment of the Reverend Dr. George D. Ossman as chaplain in 1943, the administration gave clear evidence of its awareness of the need for a specialized caring ministry to the hospitalized patient and his family. The chaplaincy program was significantly expanded in 1958 and was certified to begin training clergymen in the area of pastoral counseling of troubled persons. Since then, a continuous certificate-awarding, accredited program has been in existence and has evolved into the present program in patient counseling. Patient counseling, as it exists today, became an integrated program in the School of Allied Health Professions in 1970.

PHILOSOPHY

With the rapid growth of health care and the increasingly complex problems of medical ethics and viable delivery systems, it is very important to educate qualified persons to deal with the human dimensions of illness and the personal and family stress related to it. Through this program, Virginia Commonwealth University has an opportunity to make a needed impact upon health education in terms of emphasizing the human needs related to crises of living. By so doing, this university has a significant role to play in the important task of keeping health care human and utilizing technical and scientific methodology in the context of a deep respect for the total life of persons under stress.

OBJECTIVES

The Program of Patient Counseling is designed to assist an individual to work in the health field as one skilled in dealing with the whole person in the context of his crisis and in a cooperative interprofessional team approach. It is offered to persons who have an existing identity in a helping or counseling profession. This includes: clergy, social workers, institutional counselors, education specialists, psychologists, community health workers, and others in various aspects of the health professions. Basically, the program is designed to educate persons in understanding and counseling those who are involved in crisis situations, such as illness, impending death, injury, emotional collapse, family adjustment to health crisis or loss, unwanted pregnancy, and other such life crises.

FUTURE PLANS

A master's degree with a major in health and crisis-related personal and family counseling, emphasizing the practical and clinical competence of such counseling, is currently in the planning stages. A soundly-based research program is in the process of development and implementation.

FACILITIES

Newton House is the base for the educational program and limited space is available in clinical areas to work with persons and families in crises.

ACCREDITATION

The program is accredited by the Association for Clinical Pastoral Education, Incorporated. Advanced residents, upon vote of the

faculty, may present themselves to the Association for Clinical Pastoral Education and/or the American Association of Pastoral Counselors for certification.

PATIENT COUNSELING

The professional behavior of the student is expected to be in accordance with the Code of Professional Ethics, as adopted by the American Association of Pastoral Counselors on April 24, 1965, (excluding Principle IV). This code may be found in the offices of the faculty.

PROGRAMS

Students and residents serve in the dual capacity of providing service while learning. Classes are primarily patient oriented, with actual patient contact as the learning vehicle. Didactic classes are coordinated with the entire learning process. Seminars comprise 10 hours per week, other classes eight hours per week, and service care of patients the remainder. Night duty and weekend duty in rotation is required of all students in the program. Each student receives weekly individual supervision by a member of the faculty.

Several courses are offered for persons at different levels of experience and training:

1. (a) Part-time programs are available for local persons who wish to commute. This requires two days per week (plus overnights) for 16 weeks. These programs are offered twice per academic year, in the fall and spring semesters.

(b) One day per week for both semesters.

2. A course for 11 weeks in the summer session is full-time and is available to post-graduate students.

3. A Residency I level year is available to six mature, experienced persons.

4. A Residency II level year is available to three selected persons in supervisory training.

5. Two senior residents, Residency III, function administratively as departmental assistants and teaching fellows.

Residents receive stipends for services rendered. Information about stipends may be secured by contacting the admissions chairman.

ADMISSION REQUIREMENTS

1. Fall and spring semester programs:
B.A. or its equivalent
B.D., M.Div., M.A., Ph.D., or equivalency
Professional standing in the community
Personal interview with a member of the supervisory staff.

2. Summer session (11 weeks):

B.A., or its equivalent

Enrollment in an accredited graduate school or its equivalent, or demonstration of professional competence
Personal interview with representative of the program

3. Residency I:

B.A., or its equivalent

B.D., M.Div., M.A., Ph.D., or equivalency
Recognition in the professional community

Demonstration of personal maturity
Personal interview with supervisory staff

4. Residency II:

B.A., or its equivalent

B.D., M.Div., M.A., Ph.D., or equivalency
Professional standing in the community 2 to 5 years experience in chosen profession

An expressed interest in pursuing the supervisory training process
Demonstration of personal psychotherapeutic or counseling experience
Intern year in an accredited center
Personal interview with supervisory staff

5. Residency III:

All of Residency II requirements, plus two full years of training in an accredited center

Endorsement for supervisory training by the Regional Certification and Accreditation Committee of the Association for Clinical Pastoral Education, Inc.

CURRICULUM

Residency I

		Semester Hours		
		Fall	Spring	Summer
PAC 551-552.	Selected Issues in Health Care: I and II.....	2	2	-
PAC 553-554.	Use of Religious Resources in Patient Care.....	2	2	-
PAC 555.	Theory and Practice of Patient Counseling I.....	3	-	-
PAC 556.	Theory and Practice of Patient Counseling II.....	-	3	-
PAC 557-558.	Clinical Practicum: I and II.....	6	6	-
PAC 561-562.	Group Process: I and II.....	2	2	-

PAC 570.	Clinical Research.....-	-	4
PAC 580.	Clinical Practicum III -	-	5
PAC 590.	Practicum in Group Process	-	1
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FACULTY

Professor: Prest (Chairman)
Associate Professor: Woodruff
Assistant Professor: Mauney
Instructor: McKeever
Lecturer: Oglesby

Residency II

PAC 601-602.	Selected Issues in Health Care III and IV	2	2	-
PAC 603-604.	Patient Counseling Evaluation: I and II	4	4	-
PAC 605-606.	Pastoral Counseling in a Psychiatric Clinic I and II.....	3	3	-
PAC 607-608.	Group Process: I and II	2	2	-
PAC 611-612.	Clinical Pastoral Supervision: I and II	2	2	-
PAC 620.	Clinical Practicum in Research	-	-	5
PAC 630.	Pastoral Counseling Practicum	-	-	4
PAC 640.	Group Process Practicum	-	-	1
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Residency III

PAC 651-652.	Advanced Clinical Pastoral Supervision I and II	7	7	-
PAC 653-654.	Advanced Pastoral Counseling I and II	3	3	-
PAC 655-656.	Selected Issues in Health Care: V and VI	2	2	-
PAC 660.	Supervision Practicum	-	-	10
		<hr/>	<hr/>	<hr/>
		12	12	10

Summer Intern Basic Program

PAC 500.	Selected Issues in Health Care	2
PAC 510.	Introduction to Patient Counseling	5
PAC 520.	Use of Religious Resources in Patient Care	1
PAC 530.	Introduction to Group Process	1
PAC 540.	Foundations of the Person	1
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COURSES OF INSTRUCTION

The Program of Patient Counseling has an integrated curriculum in which the summer basic, intern, and residency level students experience their core courses as a group. Exceptions to this rule are by faculty invitation only. Admission to any of the below courses is upon approval of the instructor.

Residency I

PAC 551-552. Selected Issues in Health Care: I and II. LH-4; SH-4. I and II. Theory, research, and techniques in specialized topics of current interest are presented. Guest lecturers are utilized extensively.

PAC 553-554. Use of Religious Resources in Patient Care: I and II. LH-4; SH-4. I and II. Students present clinical material related to subject area for class reaction and supervision. Primary emphasis is given to student's work with hospitalized people. Religious rituals, methodology of usage, and philosophical and theological issues will be covered.

PAC 555. Theory and Practice of Patient Counseling I. LH-3; SH-3. I. A broad course for the beginning post-graduate student in patient counseling, emphasizing the role of the patient counselor, theological foundations, death and dying, ministry to the poor and aging.

PAC 556. Theory and Practice of Patient Counseling II. LH-3; SH-3. II. Emphasis on psychological foundations of pastoral care and counseling, crisis, intervention, human sexuality, marriage and family counseling, pastoral counseling of alcoholics, and group dynamics.

PAC 557-558. Clinical Practicum: I and II LH-8; CH-28; SH-12. I and II. The student is assigned to selected areas of the hospital and is given the opportunity to apply and practice interview and therapeutic skills with patients and their families. The student is given the opportunity to present clinical materials in seminar and receive peer feedback. All practicum work is performed under the supervision of an appropriate faculty member.

PAC 561-562. Group Process: I and II. LH-4; SH-4. I and II. This course utilizes small group interaction as a vehicle to explore techniques and procedures common to group behavior and as a laboratory for learning relational skills and techniques.

PAC 570. Research. LH-1; CH-8; SH-4. S. The student is expected to do an original research project utilizing the clinical areas of the hospital and to present this to the department.

PAC 580. Clinical Practicum III. LH-3; CH-7; SH-5. S. Emphasis given to the areas in which the student is doing his research project for the summer.

PAC 590. Practicum in Group Process. CH-2; SH-1. S. This course is a continuation of PAC 561-562.

Residency II

PAC 601-602. Selected Issues in Health Care: III and IV. LH-4; SH-4. I and II. Theory, research, and techniques in specialized topics of current interest are presented. Guest lecturers are utilized extensively. Students are expected to present a topic of their own interest.

PAC 603-604. Patient Counseling Evaluation: I and II. LH-4; CH-20; SH-8. I and II. The objective of this course is to evaluate the developing ability of the student in patient care situations and to increase the level of competence as a hospital counselor-chaplain.

PAC 605-606. Pastoral Counseling: I and II. LH-4; CH-6; SH-6. I and II. Issues and dynamics developed in the counseling relationship are explored in terms of both the counselor and counselee. Each student is expected to be involved in at least one on-going counseling relationship and to submit tapes periodically demonstrating the counseling process.

PAC 607-608. Group Process: I and II. LH-4; SH-4. I and II. This course utilizes small group interaction as a vehicle for learning relational skills and techniques.

PAC 611-612. Clinical Pastoral Supervision: I and II. LH-4; SH-4. I and II. Introduction to clinical supervision for those students whose goal is to become certified as supervisors in clinical pastoral education. Experiences under supervision of the students themselves will be utilized, as well as supervision the advanced students may be giving to beginning students, and the rapidly growing literature in clinical supervision.

PAC 620. Clinical Research. LH-1; CH-8; SH-5. S. The advanced student is given an opportunity to research and study an area of specialty within the hospital and develop further a competency in that specialty. Original research is expected and supervision is provided for this work.

PAC 630. Pastoral Counseling Practicum. LH-2; CH-4; SH-4. S. PR: PAC 605-606. Emphasis on increased competency in counseling. Audio and video tapes are used to evaluate the counseling process. A growing professional identity as counselor is expected of the student.

PAC 640. Group Process Practicum. CH-2; SH-1. S. PR: PAC 607-608. Group dynamics are experienced and observed through functioning as a small interactive group.

Residency III

PAC 651-652. Advanced Clinical Pastoral Supervision: I and II. LH-4; CH-30; SH-14. I and II. Advanced students who are supervising beginning students will present their work for critique by the faculty. Emphasis will be given to gaining skill in the theory and practice of supervision, developing and administering an educational program, integrating an understanding

of the person as seen from the various helping disciplines, and developing skill in group functioning and leadership.

PAC 653-654. Advanced Pastoral Counseling Practicum: I and II. LH-4; CH-6; SH-3. I and II. PR: PAC 605-606. Particular emphasis given to the growing identity and competence as a counselor. Peer feedback is evaluated as a part of the learning process. Students critique each other with faculty supervision.

PAC 655-656. Selected Issues in Health Care: V and VI. LH-4; SH-4. I and II. PR: PAC 601-602. The student is expected to assume a leadership role in this seminar and demonstrate competency in presentation.

PAC 660. Supervision Practicum. CH-30; SH-10. S. The post-graduate student in patient counseling is given an opportunity to apply supervisory skills through designing and conducting a clinical educational experience for basic students in patient counseling. Careful supervision and evaluation of the student is provided. Available only to postgraduate students in patient counseling approved by the faculty.

Summer Basic Program

PAC 500. Selected Issues in Health Care. LH-3; SH-2. S. A variety of health care professionals are utilized to present to the beginning student selected topics designed to enable the student to better understand the various forces at work in health care and the resources that are available. Special emphasis is given to understanding the general hospital and its role in the community.

PAC 510. Introduction to Patient Counseling. LH-4; CH-14; SH-5. S. The student is assigned to selected areas of the hospital and is given the opportunity to practice and develop relational skills with patients and their families as they adjust to the hospital situation, and to present this work for supervision and peer feedback in seminars and individual supervision.

PAC 520. Use of Religious Resources in Patient Care. LH-2; SH-1. S. Students present clinical material related to subject area for class reaction and supervision. Religious rituals, methodology of usage, and philosophical and theological issues will be covered.

PAC 530. Introduction to Group Process. LH-2; SH-1. S. This course utilizes small group interaction as a vehicle to explore techniques and procedures common to group behavior and as a laboratory for learning relational skills and techniques.

PAC 540. Foundations of the Person. LH-2; SH-1. S. A comparative look at theological and behavioral understandings of the person, with particular emphasis given to implications for health and illness.

Courses Offered to Part-time Students

PAC 451-452 (551-552).^{*} Selected Issues in Health Care.

LH-1; SH-1. Theory, research, and techniques in specialized topics of current interest are presented. Guest lecturers are utilized extensively. Offered fall and spring semesters.

PAC 410 (510). Introduction to Patient Counseling. LH-4; CH-10; SH-5. The student is assigned to selected areas of the hospital and is given the opportunity to practice and develop relational skills with patients and their families as they adjust to the hospital situation, and to present this work for supervision and peer feedback in seminars and individual supervision. Offered fall and spring semesters.

PAC 411 (511). The Professional as Helper. LH-2; SH-2. Utilizing the student's professional identity as a helping person, this course is designed to enable the student to identify areas of growth and to develop a model for learning in these areas. The student's professional functioning within the community and the hospital is to be presented to the seminar for group discussion and supervision. Current literature in the field will be explored and application made to the learning areas. Offered fall and spring semesters.

PAC 415 (515). Cancer: Ministry to Patient and Family. LH-3; CH-3; SH-4. This course focuses on the patient and family which has encountered cancer. It will deal with grief and the process of dying or finding new life. Creative approaches are explored. Offered only in spring semester.

PAC 416 (516). Ministry to Alcoholics. LH-3; CH-3; SH-4. Directed toward the parish pastor, this course offers clinical and educational experience in the Bureau of Alcohol Studies and Rehabilitation, with relationship to treatment and referral. Offered only in spring semester.

Department of Physical Therapy

UNDERGRADUATE DIVISION

HISTORY

The Department of Physical Therapy of the School of Allied Health Professions was established in 1945 as the School of Physical Therapy at the Medical College of Virginia. Between 1945 and 1954 the program consisted of a 12 months' professional course based upon at least three years of college work or the possession of an R.N. title. In 1954 a two-year program based on previous college work was initiated leading to the Bachelor of Science degree in physical therapy. In 1955 the school offered the degree of Bachelor of Science in Physical Therapy to eligible graduates for the first time. The last 12-month professional

course was offered during the school year of 1954-55. Between 1956 and 1968 the two-year program leading to the Bachelor of Science degree was the only program offered.

In 1946 a graduate program offering the Master of Science degree in physical therapy was established and continued to function until 1952 when it was discontinued. The program was revived in 1968 and expanded in 1971 under a full-time director.

PHILOSOPHY OF PHYSICAL THERAPY EDUCATION

The philosophy upon which our total educational program is built encompasses both academic and clinical components.

We believe that excellence in the educational process involves:

1. Providing for the student a stimulating and challenging environment which permits learning through intellectual inquiry and discovery.
2. For the student to develop facilities for self-expression and self-evaluation and to learn to share experiences with classmates, instructors, and others.
3. For the student to discover that learning for and within a profession is a lifelong process.
4. For the student to develop a sense of responsibility toward his patient. This implies an understanding of the patient's problems and his total treatment, an inquisitive attitude toward the total treatment of his patient and a compelling sense of obligation to provide for the patient the best form of treatment possible at all times.
5. For the members of the faculty to be given the opportunity to develop professionally and personally toward self-gratification.
6. For the faculty to be functioning in an atmosphere which permits individual expression, implementation of change, and mutual respect.

OBJECTIVES

The objectives of the Department of Physical Therapy as stated by the faculty are as follows:

1. To provide the best possible education for the student in physical therapy.
2. To provide an environment which allows the student to develop the capacity for participating in any of the various areas of physical therapy practice.

^{*}Undergraduate credit assigned to those persons who do not hold baccalaureate degrees.

3. The student will acquire the ability to analyze and interpret his observations.

4. Based on medical referral, the student will be able to evaluate the patient's status and select specific and appropriate treatment procedures.

5. The student will develop understanding for total patient care as related to other health professions both in institutional care, in community facilities, and in the patient's home.

6. The student will develop ability to assume responsibilities in the administration of different types of treatment facilities.

7. The student will further develop the facilities for continuing and self-education.

8. The student will continue to develop and improve skills of communication and personal relationships.

9. The student will be able to grow professionally and contribute in supervision, instruction, or research.

10. The student will develop respect for the dignity of man and an understanding of basic human needs.

FACILITIES

The Department of Physical Therapy is located on the third and fourth floors of MCV South Hospital at the southeast corner of Twelfth and Broad Streets.

This building houses administrative and faculty offices, classrooms, physical therapy laboratories, and student facilities, such as locker rooms and lounge. Classrooms and laboratories in other buildings on campus are used as needed.

Clinical education experiences for the students are offered in physical therapy clinics throughout Virginia and in other states.

In both the junior and senior academic year students observe, assist, and treat patients in clinical facilities in the city of Richmond and surrounding counties. Facilities that participate in this program are: Chippenham Hospital; Crippled Children's Hospital; John Randolph Hospital, Hopewell; McGuire Veterans' Administration Hospital; Medical College of Virginia Hospitals; Richmond Cerebral Palsy Center; Richmond Memorial Hospital; Richmond Nursing Home; and St. Mary's Hospital.

ACCREDITATION

The program offered by the Department of Physical Therapy, first accredited in 1945, was reaccredited in 1969 by a joint committee of the American Physical Therapy Association and the Council on Medical Education of the American Medical Association.

PROGRAMS—UNDERGRADUATE

Students are admitted as juniors for the fall term after the completion of two or more years of undergraduate college work. The program extends over a period of two years and leads to the degree of Bachelor of Science in Physical Therapy.

The first academic year of study concentrates on relating structural and functional aspects of the human being to various abnormalities on a broad level. An attempt is made to integrate all classroom material to provide the student with a meaningful sequence of learning. In addition to integrating classroom material, carefully planned clinical experiences are provided to complement and parallel the student's academic learning.

Each junior student spends one-half day each week for 20 weeks observing, assisting, and treating patients under the supervision of qualified clinical educators.

The second year of the student's study concentrates on relating structural and functional aspects of the human being to specific pathology. The student also learns patient problem-solving and administrative and supervisory principles. Included in the student's second year of study are six and one-half months of academic work followed by 16 weeks of full-time clinical education. At the completion of the 16 weeks, the students return to the campus for one week. The students may take the State Board Examinations at this time.

HONORS AND AWARDS

Frederick E. Vultee Memorial Award. This award was first given in 1964 in memory of Frederick E. Vultee, M.D., who was medical director of the School of Physical Therapy from 1960 until his death in 1962. This award is made in recognition of superior clinical performance during the senior year. It is given to the student who demonstrates an outstanding sense of responsibility for his patients, his colleagues, his profession, and who shows exceptional pursuit of personal and professional growth. The award includes a certificate and a \$50 U.S. savings bond.

ADMISSION REQUIREMENTS

A minimum of two years of college (64 semester hours or 96 quarter hours) is required including the requirements listed below. A student must obtain a grade of "C" or higher

in all required courses. Required courses may not be taken on a pass-fail basis without permission of the Admissions Committee.

English. Must have completed an equivalent of 6 semester hours or 9 quarter hours.

Biological Sciences. Minimum of 8 semester hours or 12 quarter hours of general biology or general zoology or the equivalent with laboratory. Additional courses may be selected from among comparative anatomy, histology, physiology, vertebrate anatomy, or embryology.

Physical Sciences. Must have completed 8 semester hours or 12 quarter hours in general chemistry and 8 semester or 12 quarter hours in general physics. These must be laboratory courses.

Mathematics. Must have completed college algebra and plane trigonometry or the equivalent.

Social Sciences. Minimum of 12 semester or 18 quarter hours, including at least 6 semester or 9 quarter hours of psychology, 3 of which must be in general psychology. The remainder should be selected from: adolescent psychology, child psychology, anthropology, economics, history, personality development, philosophy, psychology of adjustment, sociology, or statistics.

Other highly recommended courses are: Latin, French, German, analytic geometry and calculus, and physical education courses, such as gymnastics, tumbling, and modern dance.

A qualifying examination and personal interview are required of all students who are considered potentially eligible for admission by the admissions committee.

The fulfillment of scholastic entrance requirements and the ability to complete the payment of tuition and other fees do not themselves constitute assurance of admission to the program. Personality, maturity, a strong sense of purpose, and self direction are some of the attributes evaluated. Those who are selected on recommendation of the Admissions Committee still are required to demonstrate throughout the two-year program ability and personal qualifications considered necessary for carrying out the professional responsibilities of a physical therapist. Priority will be given to qualified Virginia residents.

For information concerning the profession of physical therapy or the program at Virginia Commonwealth University write to: Department of Physical Therapy, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 224, Richmond, Virginia 23298.

For applications and catalogs write to: Mr. William Robertson, Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 163, Richmond, Virginia 23298.

STATE LICENSURE AND REGISTRATION

Graduates are eligible for registration in the state of Virginia and throughout the United States and its territories. Examinations sponsored by the State Board of Medicine are offered twice yearly.

FINANCIAL ASSISTANCE

A limited amount of financial assistance is available to both junior and senior physical therapy students. The amount of assistance awarded the individual student is based on the availability of funds and the need shown by the student. MCV/VCU provides three types of student assistance: scholarships, loans, and campus employment.

For information on financial assistance, write: Financial Aid Officer, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 244, Richmond, Virginia 23298.

CURRICULUM

JUNIOR YEAR

	Semester Hours
PHT 301-302. Functional Anatomy	14.0
PHT 303. Microscopic Anatomy	2.0
ANA 305. Embryology	1.0
PHT 307-308. Functional Neuroanatomy	7.0
PHT 309. Physical Therapy Principles and Procedures I	1.0
PHT 310. Physical Therapy Principles and Procedures II	3.0
PHT 311-312. Physical Therapy Evaluation Procedures I	2.0
PHT 313-314. Clinical Science I	3.0
PHT 315-316. Clinical Education I	2.0
PIO 361. Introduction to Human Physiology	3.0
	<hr/> 38.0

SENIOR YEAR

PHT 405-406. Professional Literature	1.5
PHT 407-408. Therapeutic Exercise	10.0
PHT 409-410. Physical Therapy Evaluation Procedures II	4.0
PHT 411-412. Clinical Science II	8.0
PHT 413-414. Clinical Problem Solving	3.0

PHT 416.	Physical Therapy Management.....	2.5
PHT 420.	Clinical Education II	8.0
		<hr/> 37.0

DEPARTMENTAL ACADEMIC REGULATIONS

The minimum passing grade for a course is "D." A student who fails a test may be re-examined by consent of the instructor. The grade after re-examination cannot be above "D." All courses must be completed with a passing grade for the student to be eligible for promotion or graduation. Grade reports are given to students as each course is completed.

Academic promotion is based on recommendations by the faculty. The student is expected to:

1. Maintain a credit ratio of 2.0 or better.
2. Complete satisfactorily all non-credit courses.
3. Obtain a passing grade in all courses.
4. Maintain the personal attributes which are considered essential for a physical therapist by the clinical and academic faculty.
5. Complete payment of all fees.

The clinical education requirements must be completed to the satisfaction of the clinical and academic faculty.

GRADUATE DIVISION

HISTORY

The current graduate program in physical therapy, which was initiated in 1968 with one student, began to expand in 1971 with the appointment of a full-time director. Enrollment currently varies from 12 to 18 students.

PHILOSOPHY AND OBJECTIVES

In a world where knowledge is doubling every few years, continuing education has become a way of life for most professional people. Many of yesterday's truths have been disproven and tomorrow's truths are being generated in today's laboratories and clinics. Physical therapy, an integral part of the health care system, is involved both broadly and deeply in this atmosphere of change and growth. Expanding knowledge and skills in the basic and clinical sciences and changes in the needs and mandates of society have placed new demands and created new responsibilities for physical therapists.

These changes have not only altered the existing basic professional preparation programs but have also stimulated the development of a variety of new and innovative postgraduate and continuing education programs. The master's degree program is designed to meet the needs of many practicing physical therapists who want to increase their skills and competencies in specialized aspects of their profession. The guiding principle of this program is flexibility which provides for adaptation to the specific interests and goals of the individual student. The student may elect courses from most of the graduate departments of both the MCV Campus and the Academic Campus of VCU (e.g. anatomy, physiology, health and hospital administration, psychology, education, etc.) in addition to courses from the graduate program of the Department of Physical Therapy in order to build a meaningful, integrated, individualized program of studies.

Prospective students are encouraged to have their goals clearly defined before they start a graduate program. Typical goals might include specialization as a clinician, educator, researcher, consultant, or administrator with expertise in a basic science or in a clinical specialty.

Areas of specialization have been developed in therapeutic kinesiology, teaching therapeutic exercise, general kinesiology and biomechanics, developmental disabilities, academic and clinical education, and organization and delivery of physical therapy services.

FUTURE PLANS, FACILITIES

In addition to the usual classroom facilities, the department is developing a kinesiological research laboratory with equipment for both bioelectrical and photographic studies. Graduate students interested in education do their teaching practicum in the undergraduate classes and laboratories and in the clinical departments of MCV Hospitals. A clinical specialty practicum may be individually arranged in appropriate facilities in or out of Richmond.

Present courses and facilities will be expanded as enrollment and student interests indicate a need.

ADMISSION REQUIREMENTS

1. All general requirements for admission as specified by the section on graduate studies of the Medical College of Virginia of Virginia Commonwealth University.

2. Graduation from a physical therapy program approved by the Council on Medical Education on the American Medical Association in collaboration with the American Physical Therapy Association (or, for foreign students, its equivalent as determined by the Physical Therapy Graduate Program Admissions Committee).

TRAINEESHIPS AND ASSISTANTSHIPS

In the past, the department has been able to offer a limited number of federal traineeships (stipend, tuition, and fees) and clinical assistantships (salary). These will continue to be offered as funds allow. Interested students should make inquiries to the program director.

FACULTY

Professors: Hirt (Chairman); Payton

Associate Professor: Jones

Assistant Professors: Kelsey; Lamb; MacQueen;

McDonald; Newton; Sevier; Yoder

Instructors: Leonard; Plumstead

Clinical Instructors: Crabb; Giles; Hamilton;

Satterwhite

COURSES OF INSTRUCTION— UNDERGRADUATE DIVISION

The Department of Physical Therapy has an integrated curriculum in which subject matter is taught in blocks of time which does not lend itself to identification by lecture or laboratory hours per week. In lieu of this the hours are identified more realistically by total hours taught.

PHT 301-302. Functional Anatomy. Total LH-180; Total Lab H-100; SH-14.0. I, II. Planned specifically for the physical therapy student to develop a thorough understanding of those fundamental facts and principles that apply most directly to his future work. Particular emphasis is placed upon the anatomy of the musculoskeletal and neuromuscular systems. Abnormal functions, as encountered later during clinical work, are discussed and related to normal living structure and function. Students are required to dissect the human body.

PHT 303. Microscopic Anatomy. Total LH-40; SH-2.0. I. A study of the basic principles of living tissue. Emphasis is placed on structural and functional relationships with the needs of the physical therapist in mind.

PHT 307-308. Functional Neuroanatomy. Total LH- 120; SH-7.0. I and II. A study of the basic structural and functional aspects of the human nervous system. Clinical phenomena are introduced for the purpose of promoting understanding of function and relating the subject to the practice of physical therapy.

PHT 309. Physical Therapy Principles and Procedures I. Total LH-12.5; Total Lab H-8; SH-1.0. I. Designed to orient the beginning physical therapy student to the hospital setting and to his future professional role. Instruction is given in safety procedures, transfer techniques, the medical record, vital signs, medical aseptic technique, and principles of bandaging.

PHT 310. Physical Therapy Principles and Procedures II. Total LH-28; Total Lab H-31; SH-3. II. A study of the theory and therapeutic application of massage, hydrotherapy, thermotherapy, ultraviolet, pressure, and traction. Emphasis is on clinical application and problem solving.

PHT 311-312. Physical Therapy Evaluation Procedures I. Total LH-25; Lab H-30; SH 2.0. I and II. Designed to teach some of the basic measurement procedures used by the physical therapist in patient evaluation. These include measurement of the length and girth of body parts, joint range of motion, manual muscle testing, and postural analysis.

PHT 313-314. Clinical Science I. Total LH-30; Total Lab H-14; SH-3. I and II. This course presents the basic psychological components of patient care. The second portion is designed to acquaint the student with the principles of evaluation, goal setting, and program planning; to offer practical skills in functional training and an overview of the clinical picture of the spinal cord injured patient.

PHT 315-316. Clinical Education I Total CH- 112; SH-2. I and II. Supervised clinical experiences are provided for one-half day each week throughout the junior year in several different facilities. The student has the opportunity to observe and compare behavior patterns in normal and disabled individuals; observe, assist with, and treat patients in clinical settings and in public health facilities.

PHT 317-318. Applied Physiology. Total LH-67.5; Total Lab H-48; SH-2.5. I and II. A lecture-laboratory course on the basic mechanisms of action and interaction of the various body systems with special emphasis on the function of the neuromuscular system and its relationship to the treatment procedures in physical therapy.

PHT 405-406. Professional Literature I and II. Total LH-30; SH-1.5. I and II. This course is designed to give the student the opportunity to pursue and present a topic of personal interest. The presentation may be in the form of literature, research, or a project of professional relevance.

PHT 407. Therapeutic Exercise. Total LH-150; Total Lab H-60. SH-10. I and II. Study of exercise as a therapeutic measure is approached through scientific principles acquired from the basic medical sciences. Included are the general principles of human development and tests and measurements, normal and abnormal sensorimotor development, and basic principles and techniques of facilitating responses desired in the performance of exercise.

PHT 409. Physical Therapy Evaluation Procedures II. Total LH-43; Total Lab H-25; SH-4.0. I. Basic physical principles related to electricity and electronics are re-

viewed. Lectures pertain to physical and physiological effects of the low frequency currents and their therapeutic indications and contraindications. In laboratory practice, particular emphasis is placed on diagnostic use of these electrical currents. Manual muscle testing is also included.

PHT 411-412. Clinical Science II. Total LH- 119; Total Lab H-7; SH-8. I and II. This course is designed to integrate the pathology of medical conditions with physical therapy procedures. Medical conditions include orthopedic problems, respiratory disorders, neurological conditions, burns, transplants, geriatrics, and prosthetics.

PHT 414. Clinical Problem Solving. Total LH-25; SH 2.5. II. An opportunity for the student to pursue independently his clinical interests by contracting with a faculty advisor and clinicians. Weekly seminars present an opportunity for discussion of clinically related topics.

PHT 416. Physical Therapy Management. Total LH-40; SH-2.5. II. Lectures and discussions will provide information concerning the physical therapist's responsibility in the management of a physical therapy department. Areas of discussion include ethical principles, financial considerations, concepts of supervision, and principles of hospital administration.

PHT 420. Clinical Education II. Total CH-68 0; SH-8. I and II. Supervised clinical experiences are provided part-time in the Richmond area first semester. Full-time supervised experiences in the evaluation, program planning, and treatment of patients with a variety of conditions are provided second semester. These two eight-week affiliations in two different clinical settings provide an opportunity for the student to gradually assume increasing responsibility for the total care of his patient.

PHT 421-422. Independent Study I and II. LH-variable; SH-1-6. I and II. An elective in which the student may explore areas of his own interest with faculty supervision.

GRADUATE DIVISION

AHP 510. Introduction to Gerontology. See page 96.

AHP 530. Special Topics in Allied Health. See page 96.

AHP 573. Teaching in Health Professional Schools. See page 96.

AHP 574. Practicum in Allied Health Teaching. See page 96.

AHP 581. Administration in the Allied Health Professions. See page 96.

AHP 582. Supervision in the Allied Health Professions. See page 97.

PHT 501. Advanced Analysis of Human Motion I. LH-2; Lab H-2; SH-3; I. An introduction to the use of modern instrumentation in the study of both normal and pathological human motion. Each student will design, conduct, and report several pilot kinesiological studies using different instrumental approaches, including polygraph, various transducers, and electromyography.

PHT 502. Advanced Analysis of Human Motion II. LH-1; Lab H-4; SH-3; II. Study will include photography, cinematography, electrogoniometry, and other techniques.

PHT 506. Therapeutic Kinesiology. LH-2; CL H-3; SH-3 or 4; II. A study of motor behavior in both normal and pathological conditions. Reading and discussion of the basic literature of current neurophysiological approaches to therapeutic exercise and an integration of these concepts into a comprehensive model of human movement.

PHT 520. Clinical Specialty Practicum. CH-40; SH-1 to 9; I, II, S. CR: PHT 530. PR: Appropriate courses in sciences basic to area of specialization. 1 semester hour's credit per 60 clinical hours. Concentrated clinical experience in the student's chosen area of specialization under the guidance of an approved preceptor.

PHT 530. Clinical Specialty Seminar. SH-1 to 3; I, II, S. CR: PHT 520. Individual paper dealing in depth with the history, current status, and problems in a given area of clinical specialization. It is anticipated that the student will identify several potential thesis topics in the course of preparing this paper.

PHT 540. Special Topics in Physical Therapy. SH-1 to 4; I, II, S. Guided independent study of specific topics not discussed in other courses or discussed in less detail in other courses. Student's topic of desired study must be identified and approved prior to enrollment.

PHT 591. Current Problems in Physical Therapy. LH-2; SH-1 to 2; I. Readings, discussions, and reports on the current status of the profession, changing parameters of clinical practice and changes in the organization and delivery of direct and indirect patient care. A model for professional development is presented. May be repeated for one credit during second year of study.

PHT 592. Physical Therapy Seminar. LH-1; SH-1; II. Reports on current problems and issues in the field of physical therapy. May be repeated for a maximum of two credits.

PHT 690. Research in Physical Therapy. SH-1 to 15; I, II, S. Research in preparation for the master's degree thesis.

Department of Hospital and Health Administration

HISTORY

Education in health administration at the Medical College of Virginia was initiated in 1949 with establishment of the "School of Hospital Administration." Prior to the Masters of Hospital Administration (M.H.A.) degree being first awarded in 1955, early graduates received a postgraduate certificate in hospital administration. The program was accredited by the Accreditation Commission on Graduate Education for Hospital Administration in 1956,

the eighth program in the nation to be accorded this status. The program has maintained full accreditation since that time.

On July 1, 1972, the "School of Hospital Administration" was re-designated as the Department of Hospital and Health Administration. This change was made to reflect more clearly the program's standing as a central component of the School of Allied Health Professions and to indicate a commitment to extend the curriculum to encompass health services administration.

In addition to the graduate program, the Department of Hospital and Health Administration now includes a Bachelor of Science in Health Care Management degree, an active continuing education program, and a growing research program.

PURPOSES AND OBJECTIVES

The department's principal function is to provide high-quality education leading to careers in the administration of health organizations. Corollary functions are to sponsor research concerning the organization, administration, financing, and evaluation of health services and to serve the community—its people and institutions—through programs involving both faculty and students.

To provide clear direction in the performance of these basic functions, the faculty has adopted six long-range (3-5 year) goals as follows:

- Provide increasingly better education in health care administration.
- Expand the department's role in the education of other health professionals.
- Strengthen the department's research program.
- Strengthen the department's continuing education and community service programs.
- Achieve increased recognition for departmental excellence in education, research, and community service.
- Improve the resources and administrative support needed by faculty and staff to achieve departmental objectives.

These long-range goals are being achieved through a management-by-objectives program which has been in operation since 1973. Through this process faculty, alumni, and students are jointly involved in selecting long- and short-range (fiscal year) goals and in developing plans to accomplish them.

FACILITIES

The Department of Hospital and Health Administration's graduate program is located in Randolph-Minor Annex, an historic building located on the corner of College and Broad Streets on the MCV Campus. The department's undergraduate program is located on the fifth floor of the Nursing Education Building.

ANNUAL LECTURESHIPS AND ENDOWED PROFESSORSHIPS

The Charles P. Cardwell Lectureship Series was inaugurated and endowed by the department's alumni. It is held in conjunction with the annual meeting of the American College of Hospital Administrators. The series is coordinated by a standing committee of the Hospital and Health Administration Alumni Association.

Endowed professorships have been established in honor of individuals who have played vital roles in the development of the Medical College of Virginia. The Arthur Graham Glasgow Professorship of Hospital Administration was established in 1957 in honor of Dr. Glasgow who had shown such a vital interest in hospitals. The Glasgow Professorship is presently held by Dr. Lawrence Prybil, chairman of the department.

UNDERGRADUATE PROGRAM— B.S. DEGREE IN HEALTH CARE MANAGEMENT

The undergraduate program was established in 1973 with the assistance of a special projects grant from the National Institutes of Health. This program, a cooperative effort between the Department of Hospital and Health Administration and the university's School of Business, has three purposes. First: to meet administrative needs in nursing homes and other long-term care facilities. This is being achieved by providing a B.S. degree in health care management with a major in long-term care administration. Secondly: to meet growing needs in the health industry for functional specialists in selected areas. This will be met by enabling undergraduate students in selected disciplines such as accounting to earn a 12-hour minor in health care. Thirdly: to provide education in health care organization and management to undergraduate students in other health professions. This is being addressed by encouraging students to take available courses and, when appropriate, through

developing new courses to meet special needs and requirements.

Students who earn a B.S. degree in health care management are prepared to accept management positions in a broad range of organizations and agencies including: long-term care facilities, rehabilitation centers, governmental agencies with responsibilities in long-term care and gerontology, planning agencies, convalescent facilities, and multi-purpose service centers.

The B.S. degree in health care management with a major in long-term care administration is a two-year program offered by the Department of Hospital and Health Administration in conjunction with the School of Business. Students are admitted as juniors after completing two academic years of course work at an accredited college or university. During their junior and senior years they must satisfactorily complete 30 semester hours of required courses in the Department of Hospital and Health Administration, 18 semester hours of required courses in the School of Business, and sufficient elective courses to achieve the minimum of 126 hours required for graduation.

Students who meet specified prerequisites and standards are accepted into the program on a transfer basis from other schools within Virginia Commonwealth University and from other colleges and universities including community colleges.

Admission Requirements for B.S. Degree Program

Students must have completed a minimum of 60 semester hours of undergraduate work and attained a GPA of 2.5 on a four-point scale to be considered for admission. Coursework must include six hours in accounting, six hours in economics, and three hours in statistics. Students who do not fully meet these criteria and/or prerequisites may be accepted into the program on conditional status if recommended by the departmental faculty and approved by the department chairman.

Further information concerning admissions can be obtained by writing to the Associate Chairman—Undergraduate Program, Department of Hospital and Health Administration, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 203, Richmond, Virginia 23298.

Program of Studies for B.S. Degree Program

Students in the B.S. degree program must satisfactorily complete 30 semester hours of required courses in the Department of Hospital and Health Administration. These courses are as follows:

JUNIOR YEAR, FALL SEMESTER

Semester Hours

HCM 401.	Health Care Services I	3
HCM 323.	Psychological Aspects of Illness and Disability	3

JUNIOR YEAR, SPRING SEMESTER

HCM 402.	Health Care Services II	3
HCM 302.	Management in Health Care Facilities	3

JUNIOR YEAR, SUMMER SESSION

HCM 400.	Health Care Management Field Work	3
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SENIOR YEAR, FALL SEMESTER

HCM 404.	Fiscal Management of Health Care Facilities	3
HCM 406.	Personnel Management in Health Care Facilities	3

SENIOR YEAR, SPRING SEMESTER

HCM 306.	Legal and Regulatory Controls in the Health Industry	3
HCM 408.	Seminar in Health Care Management	3
AHP 410.	Introduction to Gerontology	3
Total required hours in departmental courses		30

Students in this program must also satisfactorily complete at least 18 semester hours in the School of Business. These required courses are:

BUS 311.	Financial Management	3
BUS 320.	Fundamentals of Management	3
BUS 323.	Legal Environment	3
BUS 331.	Personnel Management	3
BUS 401, 402.	Cost Accounting	6
Total required hours in School of Business		18

The remainder of the 126 hours required for the B.S. degree are satisfied by taking elective courses. Numerous courses are available to meet specialized student needs and interests. In all instances, elective courses are selected on an individual basis by the student and his faculty advisor according to the student's particular career interests and educational needs.

Undergraduate Minor in Health Care Organization

An important purpose of the undergraduate program is to meet growing needs for functional specialists in the health industry by encouraging students in selected disciplines to earn a 12-hour minor in health care. The intent of this series of courses is to provide students with knowledge, skills, and experiences that will complement instruction in their major discipline and enhance their capability to apply this discipline effectively in health care organizations and agencies.

During the 1976-77 academic year, a minor in health care will be available for students working toward a B.S. degree in accounting within the School of Business. It is anticipated that minors for students in other disciplines will be available in the future.

Required courses for students working toward a minor in health care organization are as follows:

HCM 302.	Management in Health Care Facilities.....	3
HCM 500.	Hospital and Medical Care Organization.....	3
Total required hours		6

In addition, students working toward a minor in health care will take two of the following three courses:

HCM 306.	Legal and Regulatory Controls in the Health Industry.....	3
HCM 404.	Fiscal Management of Health Care Facilities.....	3
HCM 406.	Personnel Management in Health Care Facilities	3

GRADUATE PROGRAM

MASTER OF HOSPITAL ADMINISTRATION (M.H.A.)

The graduate program is designed to prepare individuals for entry-level administrative positions in hospitals and other health care organizations and provide a solid foundation for executive career development in health care administration.

The 1976-1977 curriculum requires a total of 56 semester hours to qualify for the M.H.A. degree. These requirements are completed during the 23-month period that includes four academic semesters on campus and a nine-month administrative residency. During the residency, the student is responsible for completing a major problem-solving project in addition to other requirements. The culmination

of the program is a comprehensive examination taken at the end of the administrative residency period.

For M.H.A. students who select the general curriculum, 31 hours are fulfilled through required courses, 19 hours through elective courses, and six hours through administrative residency.

The general curriculum provides considerable flexibility for individualized curriculum development. For students who are interested and qualified, there is opportunity to participate in one of two areas of concentration in the graduate curriculum: *health care finance* and *health care planning*.¹ Students who choose to pursue either concentration utilize their elective course hours to complete a sequence of courses in either health care planning or health care finance. These students complete all courses required for students in the general curriculum and use most of their remaining course hours to gain additional knowledge, skills, and competency in either planning or finance.

Admission Requirements for M.H.A.

Program

Graduate courses in hospital and health administration are open to any person having the necessary personal and academic qualifications. There is a difference, however, between being permitted to register for a particular course and acceptance as a candidate. Students enrolled in the Department of Hospital and Health Administration are classified in *full status*, *conditional status*, or *special status*.

Students who have attained *full status* in the Department of Hospital and Health Administration must have met all admission requirements (see following sub-section). Students in *full status* are candidates for a M.H.A. degree. If an applicant offers qualifications which approximate the admission requirements for the M.H.A. degree, he may be admitted at the discretion of the faculty in a *conditional status*. In a conditional admission, the student must satisfy the full requirements prior to becoming a candidate for the M.H.A. degree. Advancement to full status may be

¹ To be eligible to enter the *health care finance* concentration, students must have degrees or strong concentrations at the undergraduate or graduate level in accounting, finance, or economics. To be eligible to enter the *health care planning* concentration, a student must have solid preparation and proficiency in the "foundation" areas (i.e., accounting, organization theory, statistics). A student may enter a concentration with the joint approval of the faculty advisor and the faculty coordinator for that area.

approved by vote of the faculty with concurrence by the chairman of the department of Hospital and Health Administration when the candidate has fulfilled all admission requirements and satisfactorily completed one semester of graduate study. Full status may be withheld or terminated as a result of one or more unsatisfactory grades.

An individual who desires to enroll in one or more courses offered by the Department of Hospital and Health Administration but does not intend to work toward a degree offered by this department, may apply for admission as a special student. Admission in *special student status* is limited. Whenever enrollment must be limited, preference will be given to students who must take the course to meet degree requirements.

Students from other countries are encouraged to apply for admission to the Department of Hospital and Health Administration. Foreign applicants, however, must meet all the regular requirements for admission, take the Test of English as a Foreign Language, and submit evidence of financial responsibility by indicating their source of funds required while at Virginia Commonwealth University (See page 14).

Applications are encouraged from individuals of all undergraduate fields of study. The Admissions Committee places more emphasis on evidence of sound scholarship and growth potential than on the specific content of the educational program previously completed.

Although no specific undergraduate major is required, undergraduate preparation should include at least one college-level course in accounting, economics, and statistics. In addition, a working knowledge of basic, college-level algebra is a prerequisite for departmental courses in quantitative methods. Prospective students who have completed courses in one or more of the social and behavioral sciences; i.e., economics, sociology, political science, psychology, finance, accounting, and business management, will have improved their opportunity for admission to the program.

Virginia Commonwealth University is a state-supported institution, and preference is given to applicants with equal qualifications who are residents of Virginia. There is no quota established, however, for Virginia and out-of-state students.

To be considered for admission in full status and as a candidate for the M.H.A. degree,

the applicant must meet the following minimum qualifications: (1) present evidence of personal achievement, scholarship, intellectual ability, and professional promise; (2) hold a baccalaureate or higher degree from a college or university which is fully accredited by the Association of American Universities or by a regional accrediting agency, or an acceptable equivalent; (3) have at least a 2.75 grade point average on a four-point scale in his undergraduate work or present solid evidence that he can successfully pursue graduate study; and (4) attain a satisfactory score (at least 50th percentile) on the Graduate Record Examination Aptitude Test or the Admissions Test for Graduate Study in Business.

Requests for further information regarding admission requirements, standards, and procedures should be sent to:

Graduate Admissions Coordinator, Department of Hospital and Health Administration, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 203, Richmond, Virginia 23298.

Program of Studies for M.H.A. Program

Students in the M.H.A. degree program must satisfactorily complete a total of 56 semester hours. The following list presents the required and elective courses that are available for the 1976-1977 academic year. Numerous other courses are available to meet specialized student needs. Depending upon the student's educational background and experience, required courses may be waived with the joint approval of the student's faculty advisor and the course instructor. Elective courses are selected on an individual basis by the student and his faculty advisor according to particular career interests and educational needs.

First Year: Summer Semester (June to August)

Required Courses ²

Department of Hospital and Health Administration:

	Semester Hours
HHA 601. Hospital Organization and Administration.....	3

²On this and subsequent pages, a course that is required only for students in the health care planning concentration is marked by a "P" in parentheses; courses that are required only for students in the health care finance concentration are marked by a "F" in parentheses.

		Semester Hours
HHa 602.	Community Health Organization and Administration.....2	
HHa 604.	Health Economics2(P, F)	
	Basic required hours.....5	
	Hours required for students concentrating in health care planning.....7	
	Hours required for students concentrating in health care finance.....7	
HHa 600.	Hospital and Health Care Systems3	
HHa 604.	Health Economics.....2 or 3	
	School of Business:	
BUS 610.	Managerial Economics.....3	
BUS 633.	Labor Relations.....3	
BUS 641.	Organization Theory.....3	

First Year: Spring Semester (January-May)

Required Courses

Department of Hospital and Health Administration:		
HHa 607.	Advanced Financial Management in Health Organizations.....3(F)	
HHa 611.	Hospital and Medical Law.....3	
HHa 644.	Community Health Studies I.....2	
HHa 658.	Hospital Personnel and Labor Relations.....4	
	Basic required hours.....9	
	Hours required for students concentrating in health care planning.....9	
	Hours required for students concentrating in health care finance.....12	

Elective Courses^{3,4}

School of Business (Academic Campus):	
BUS 602.	Advanced Managerial Accounting.....3
BUS 608.	Managerial Accounting.....3
BUS 633.	Labor Relations.....3
BUS 641.	Organization Theory.....3
School of Basic Sciences:	
BIS 521.	Statistical Principles for Health Care.....3

First Year: Fall Semester (August-December)

Required Courses

Department of Hospital and Health Administration:	
HHa 603.	Health Care Organization and Policy.....3
HHa 606.	Financial Management in Health Organizations.....3
HHa 614.	Health and Hospital Planning.....3
HHa 647.	Organizational Behavior and Management in Health Organizations.....3
School of Basic Sciences:	
BIS 522.	Operations Analysis.....3
	Basic required hours.....15
	Hours required for students concentrating in health care planning.....15
	Hours required for students concentrating in health care finance.....15

Elective Courses⁵

Department of Hospital and Health Administration:

³Students must have proficiency in accounting, organization theory, and statistics equivalent to that provided by BUS 608, BUS 641, and BIS 521 before entering subsequent advanced courses. Therefore, depending upon their educational background and experience, individual students may be directed by their faculty advisors to take one or more of these courses during the summer and/or fall semesters.

⁴For this year, BUS 608 is being offered as substitute for HHa 605, "Managerial Accounting in Health Organizations."

⁵ HHa 600 is a new course designed especially for graduate students in programs other than health administration who wish to learn about the organization, operation, and problems of hospitals and the health care industry or "system."

Elective Courses

Department of Hospital and Health Administration:	
HHa 600.	Hospital and Health Care Systems3
HHa 668.	Independent Study in Hospital and Health Administration.....3
HHa 698.	Thesis I.....3

Department of Sociology (Academic Campus):	
SOC 545.	Medical Sociology.....3

School of Business (Academic Campus):	
BUS 610.	Managerial Economics.....3

Second Year: Summer Semester (May-July)

Required Courses

Department of Hospital and Health Administration:	
HHa 608.	Seminar in Health Care Finance3(F)
HHa 616.	Seminar in Applied Health Planning.....3(P)
HHa 617.	Hospital Design and Construction.....2(P)
HHa 662.	Health Care and the Political Process.....2

School of Business (Academic Campus):

BUS 560.	Data Processing Systems and Methods.....	3(F)
	Basic required hours.....	2
	Hours required for students concentrating in health care planning.....	7
	Hours required for students concentrating in health care finance.....	8

Elective Courses

Department of Hospital and Health Administration:

HHA 645.	Community Health Studies II	2 or 3
HHA 652.	Applied Quantitative Methods	2 or 3
HHA 656.	Seminar in Institutional Policy.....	2 or 3
HHA 668.	Independent Study in Hospital and Health Administration.....	2 or 3
HHA 699.	Thesis II.....	2 or 3

School of Business (Academic Campus):

BUS 622.	Investment Policies.....	3
BUS 643.	Administrative Systems.....	3

Second Year: Administrative Residency**(August-May)**

HHA 702.	Administrative Residency.....	6
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ADMINISTRATIVE RESIDENCY

Nature of the Residency. The administrative residency is a requirement for all M.H.A. degree candidates. Six credits are assigned this clinical education phase. Approximately nine months are required in a residency program in an approved hospital or other health organization under the active direction and guidance of a qualified administrator (preceptor). Extended work may be required when additional time is deemed necessary by the faculty to ensure satisfactory completion of the program.

The residency provides the student an opportunity: (1) to associate closely with a hospital or health care environment; (2) to work closely with the variety of persons in the health system; and (3) to be involved in all facets of hospital and health care administration.

Research Project. All M.H.A. degree candidates are required to complete an applied research investigation during the residency period. The subject of the project must be approved by the student's preceptor and faculty advisor. Upon completion, a formal report

must be presented in writing and approved by the faculty.

A degree candidate may elect to write a thesis in lieu of (1) the project and (2) elective courses amounting to five credits. The thesis must demonstrate the student's ability to select a problem in his major field of interest and organize, analyze, and present the results of an investigation. The subject of the thesis must be approved in advance by the student's advisor and a committee of the faculty, both of whom must also approve the completed report. After the thesis has been accepted, the student must orally defend the report before a faculty committee.

Appointment to the Residency. The administrative residency follows the satisfactory completion of academic requirements; i.e., maintaining grade point average of 3.0 on a four-point scale for all graduate program coursework. The student must, in the judgment of the faculty, give evidence of sufficient maturity to constitute readiness for a clinical experience also.

The student, in consultation with the chairman of the department, his advisor, and preceptors in the affiliated institutions, participates actively in the selection of his residency assignment. When a definite interest in some type of special purpose hospital or health care institution exists, a tailored residency program may be established to strengthen those interests.

Appointment to residency is for a specified minimum period subject to extension when necessary. Announcement of appointment is made between February 1 and May 1 of the student's first year. Should a student fail to meet the requirements for entering his residency after the appointment is made, he becomes ineligible for this assignment and the residency will be cancelled until such time as the deficiency is removed.

On-campus Commitments During the Residency. During residency, the student must attend regularly scheduled, on-campus seminars of the graduate program. During these seminars he may be expected to spend time with his advisor, discuss his *project or thesis*, and participate in varied educational activities.

Educational Objectives and Policies for the Residency. A complete discussion of departmental policies and educational objectives for the administrative residency are set forth in a separate document, *The MCV/VCU*

Administrative Residency: Educational Objectives and Policies.

REQUIREMENTS FOR GRADUATION

To qualify for the M.H.A. degree, the student must meet the following requirements: (1) achieve a grade point average of 3.0 on a four-point scale for all graduate program course-work; (2) satisfactorily complete all requirements of the administrative residency including the second-year research project or thesis; (3) pass a comprehensive examination administered near the end of the student's graduate program; and (4) in the judgment of the faculty, demonstrate sufficient maturity and development to constitute readiness to enter the profession of health administration.

Degrees are regularly conferred at the commencement exercises of the university in May. A candidate for a degree in May must be present to receive the degree unless he has been excused by the dean.

DEPARTMENTAL ACADEMIC POLICIES

Student policies and regulations are published in separate documents by the university and the Department of Hospital and Health Administration. These documents may be obtained by the applicant at the time of his interview at the Medical College of Virginia Campus.

FACULTY

Professors: Prybil (Chairman); Barker; Cullen;

Rooke; Wiecking

Emeritus Professor: Cardwell

Associate Professors: Jordan; Kidd;

Mullins (Associate Chairman); MacStravic; Norville

Assistant Professors: Johnson; Markham; Modrow; Vasile; Williams

Lecturers: Cauble; Johnson; Lipson; Reid; Scott

COURSES OF INSTRUCTION

Undergraduate

HCM 302. Management in Health Care Facilities. LH-3; SH-3. II. PR: fundamentals of management. Study of recent developments in management theory and practice to develop a foundation of human, technical, and conceptual skills necessary for successful performance as a health care manager. The management process is examined with the focus of all course activities being management in the health facility.

HCM 306. Legal and Regulatory Controls in the Health Industry. LH-3; SH-3. II. PR: legal environment. Ex-

plores the nature of governmental involvement and that of various non-governmental agencies in health care delivery through legislation, regulation, and financial controls. Examines the types of controls and how they came into being; how controls are administered; sanctions involved; and the impact of controls in the health industry.

HCM 323. Psychological Aspects of Illness and Disability. LH-3; SH-3. I. PR: general psychology. An introduction to psychological effects of illness and disability; behavioral reactions, patient and societal attitudes; psychosomatic illness; psychological factors in treatment and care.

HCM 400. Health Care Management Field Work. SH-3. S. Readiness determined by faculty. Required of all senior majors in health care management. Assigned work under supervision in a health care facility or related institutions for four days a week. One day a week in seminars with assigned reports and problem-oriented discussions.

HCM 401-402. Health Care Services: I and II. LH-6; SH-6. I and II. Examines the structure and function of health care organizations with emphasis on long-term care facilities. Examines the role and responsibilities of health care professions and occupations in these organizations. Considers the structure and function of the health care industry.

HCM 404. Fiscal Management of Health Care Facilities. LH-3; SH-3. I. PR: basic accounting, cost accounting, principles of finance. The application of cost accounting to a health care facility; techniques of budgeting and cost controls; use of fiscal data in planning, decisions, and evaluation of care.

HCM 406. Personnel Management in Health Care Facilities. LH-3; SH-3. I. PR: personnel management. Focuses on the major elements of personnel management and labor relations that characterize the health care facility. Includes analyses of employment practices, education and training, health and safety programs, and employee relations with emphasis on problems unique to health care facilities.

HCM 408. Seminar in Health Care Management. LH-3; SH-3. II. PR: field work and seminar. Required for all seniors in health care management. An overview of the health care management field, with particular emphasis upon the needs of the aged and disabled population; student reports on individual and group projects.

See **School of Business Graduate Catalog** for descriptions of the following courses:

BUS 311 Financial Management, BUS 320 Fundamentals of Management, BUS 323 Legal Environment, BUS 331 Personnel Management, and BUS 401, 402 Cost Accounting.

GRADUATE

HHA 601. Hospital Organization and Administration. LH-3; SH-3. S. A study of the various types of hospitals

with regards to organization, role and responsibilities, and their relationships with other institutional components of the health system; an analysis of the process of hospital administration, control, and effectiveness. Didactics are complemented by coordinated field experiences, projects, and seminars with operational personnel.

HHA 602. Community Health Organization and Administration. LH-2; SH-2. S. Introduction to the organization and activities in the health system outside the hospital—their roles and problems. Introduction to administrative problem-solving as a structured process.

HHA 603. Health Care Organization and Policy. LH-3; SH-3. II. Acquaints students with the ideology and ethics of health systems, familiarizes students with medical care appraisal management, and examines selected alternative systems of health care organization.

HHA 604. Health Economics. LH- ; SH-2. I and S. Develops an understanding of: (1) economics as a managerial tool in making choices or decisions that will provide for an optimum allocation of limited health care resources; and, (2) economics as a way of thinking about and approaching issues of public policy in financing and organizing health and medical services. Individual research on crucial or controversial economic issues in the health field.

HHA 606. Financial Management in Health Organizations. LH-3; SH-3. I. A theoretical and practical study of organization and functions of health care financial administration. Emphases are on institutional fiscal policies, accounting concepts and practices, internal and external controls, financial statistical reporting, and the use of financial data as management tools.

HHA 607. Advanced Financial Management in Health Organizations. LH-3; SH-3. II. PR: HHA 506. Advanced practices of health care financial management. Emphasis on techniques to aid in financial decision making. Areas of investigation and study include analysis of financial statements, cost allocations, reimbursements, rate setting, budgeting, and capital financing.

HHA 611. Hospital and Medical Law. LH-3; SH-3. I. Examines basic principles and practices of law affecting hospitals and medical practice: the legal aspects of patient care and treatment, medical services, and other hospital-patient related functions.

HHA 614. Health and Hospital Planning. LH-3; SH-3. I. Examines the planning process in the context of both the community and the institution. Considers the essential components of planning and the development of a sound structure for planning. Examines the legal, regulatory, economic, and human factors that influence the planning process.

HHA 616. Seminar in Applied Health Planning. LH-3; SH-3. S. Provides students with opportunities to apply planning methodology, including problem definition, research design, information gathering and evaluation, to actual health issues and problems.

HHA 617. Hospital Design and Construction. LH-2; SH-2. S. Examines the essential elements and process of designing and constructing health facilities.

HHA 644. Community Health Studies I. LH-2; SH-2. II. To provide students an opportunity to apply research methods and analytic skills through their engagement in a significant community study dealing with problems in organizing, financing, and delivering health care. Faculty and student teams participate in the research and analysis of actual problems, the solution of which have the potential for immediate and long-term benefits to local communities.

HHA 645. Community Health Studies II. LH-2; SH-2. S. PR: HHA 644. Continuation of HHA 644.

HHA 647. Organizational Behavior and Management in Health Organizations. LH-3; SH-3. I and II. Analysis of the current state of management study and practice with the objective of achieving a balanced development of both knowledge and skills in solving the human problems of administration in health institutions. The managerial process is critically examined with emphasis on individual behavior and development, intergroup behavior, and behavior in the total organization.

HHA 652. Applied Quantitative Methods. LH-2; SH-2. S. Definition of the system; how to analyze it, solve its problems, fit its parts together, and redesign it with emphasis on basic quantitative and qualitative management engineering techniques and on the hospital administrator's role and appreciation for them.

HHA 656. Seminar in Institutional Policy. LH-2; SH-2. S. An analytical study of the process of creating objectives and policies within the health care institution. Examines the constellation of internal and external forces that influence policy development. Includes exercises in the development of a broad range of administrative and operative policies.

HHA 658. Hospital Personnel and Labor Relations. LH-4; SH-4. II. Examines the procurement, development, and maintenance of an effective work force. An analysis of staff development; health and safety; wage and salary administration; employee services; and labor relations.

HHA 662. Health Care and the Political Process. LH-2; SH-2. S. Examines the political process with particular emphasis on the impact of politics on health care. Focuses on current political issues in the health field, examining conflicts and anticipating effects on the health system.

HHA 698. Thesis I. LH-3; SH-3. II. Independent research study to provide the opportunity for the student to select, organize, and report the results of an investigation in a field of major interest.

HHA 699. Thesis II. LH-1; SH-2. S. PR: HHA 698. Continuation of research study begun in HHA 698.

See other sections of this and the **School of Business Graduate Catalog** for descriptions of the following courses:

- BUS 602. Advanced Managerial Accounting
- BUS 608. Managerial Accounting
- BUS 610. Managerial Economics
- BUS 622. Investment Policies
- BUS 633. Labor Relations
- BUS 641. Organization Theory
- BIY 521. Statistical Principles for Health Care
- BIY 522. Operations Analysis
- URP 531. Introduction to Urban and Regional Planning

Department of Nurse Anesthesia

HISTORY

The Department of Nurse Anesthesia was organized in 1969 as the School for Nurse Anesthetists. As such, it was the first new teaching program to be implemented in the newly organized School of Allied Health professions at the Medical College of Virginia Campus.

OBJECTIVES

The overall objective of the Department of Nurse Anesthesia is to prepare registered professional nurses for practice in the specialty art and science of anesthesiology.

This rather broad objective is accomplished by implementation of the following:

1. An in depth presentation of the basic sciences associated with anesthesia practice, with emphasis on understanding the practical application of concepts.
2. Focusing attention on the ultimate role of the nurse anesthetist as a member of the health team.
3. Providing integration of the clinical and didactic teaching programs so that the two are closely correlated throughout the course of study.
4. Placing emphasis on the great need for educators in the field, and encouraging those whose talents are oriented to pursue this goal.
5. Encouraging continued professional education by self-study and discipline, recognizing that these are the only keys to total professional maturity.
6. Providing the student with a challenging and diverse selection of surgical and resuscitative experiences with opportunity for constant criticism and evaluation.

FUTURE PLANS

The Department of Nurse Anesthesia intends to expand the curriculum in the future so the Bachelor of Science degree can be awarded to candidates who successfully complete the prescribed course of required and elective study.

ACCREDITATION

The nurse anesthesia program is fully approved by the American Association of Nurse Anesthetists which is also the certifying body for graduates of the department.

ADMISSION REQUIREMENTS

1. Graduate of an accredited school of nursing.
2. License to practice nursing in Virginia.
3. 3.0 grade point average in all science courses.
4. 450 average on State Board Examinations with no area below 400.
5. Eight semester hours of chemistry comparable to prebaccalaureate nursing chemistry.
6. Three semester hours of mathematics (preferably college algebra).
7. At least one year of experience in an area where acute nursing care is practiced is required of all associate degree graduates, and desirable for all applicants.
8. Personal interview with members of the Admissions Committee.

FINANCIAL AID

Students accepted in the Department of Nurse Anesthesia will receive a grant-in-aid of \$200 per month for each month of the program up to a maximum of 24 months.

CURRICULUM

FIRST YEAR FIRST SEMESTER

	Semester Hours
NUA 303. History of Anesthesia.....	1
NUA 311. Anesthesiology Sciences I.....	4
NUA 313. Anatomy.....	4
PMC 315. Pharmacology of Anesthetic Drugs.....	3
NUA 321. Fundamentals of Anesthesia Practice I.....	6

	Second Semester	
BIP 302.	Physics.....	3
PHC 402.	Pharmaceutical Chemistry.....	3
PIO 482.	Human Physiology.....	4
PMC 316.	Pharmacology of Anesthetic and Accessory Drugs	4
NUA 322.	Fundamentals of Anesthesia Practice.....	4
		<hr/> 18
	Summer Semester	
NUA 490.	Clinical Practicum I.....	11
		<hr/> 11
	Second Year	
	Fall Semester	
NUA 491.	Clinical Practicum II.....	11
NUA 495.	Senior Seminar	1
		<hr/> 12
	Spring Semester	
NUA 492.	Clinical Practicum III	11
NUA 496.	Senior Research Seminar.....	1
		<hr/> 12
	Summer Semester	
NUA 494	Clinical Practicum IV.....	8
Electives.....		3
		<hr/> 11

FACULTY

Medical Advisor: Boyan

Assistant Professors: Kuzava (Chairman);
Edwards; Privitera

Instructors: DeLap; Montesanti; Testa; Omick;
Stirk

COURSES OF INSTRUCTION

NUA 303. History of Anesthesia. LH-1; SH-1. I. A study of the major historical events leading to the discovery of anesthetic agents and techniques from biblical times to the present. Emphasis is placed on the importance of the great wars and on the contributions of pioneers in the field.

NUA 311. Anesthesiology Sciences I. LH-4, SH-4. A brief review of inorganic chemistry prior to the detailed study of chemical application to fluid, electrolyte, and acid-base balance anesthetic effects on metabolic processes including the metabolism of inhalation drugs is also presented.

NUA 313. Anatomy in Relation to Anesthesia. LH-4; SH-4. I. A review of the basic anatomy of the respiratory, cardiovascular, nervous, excretory, and endocrine systems. Emphasis is placed on certain diseases and processes and anatomical structures of the pediatric patient. In preparation for administering regional anesthesia, anatomical structures of the axilla, spinal column, and inguinal region are stressed.

NUA 321. Fundamentals of Anesthesia Practice I. LH-6, SH-6, CH-16. A detailed presentation of all commonly used technics and procedures including preanesthetic assessment of the patient for anesthesia. Supervised instruction in the use of anesthetic, resuscitative, mechanical, and ventilatory equipment is offered.

NUA 322. Fundamentals of Anesthesia Practice II. LH-4; SH-4; CH-16. II. A continuation of NUA 321 with emphasis on anesthetic agents and technic in common and special surgical situations. Examples include anesthesia for geriatrics; pediatrics; neuro-surgery; obstetrics; heart; chest; urological; and ear, nose, and throat procedures. This course will also discuss the legal, ethical, and psychological aspects of anesthesia administration.

NUA 490. Clinical Practicum I. SH-11; CH-25-30. Supervised clinical instruction and actual administration of anesthesia in varied surgical situations. Special emphasis is placed on development of the anesthesia care team concept.

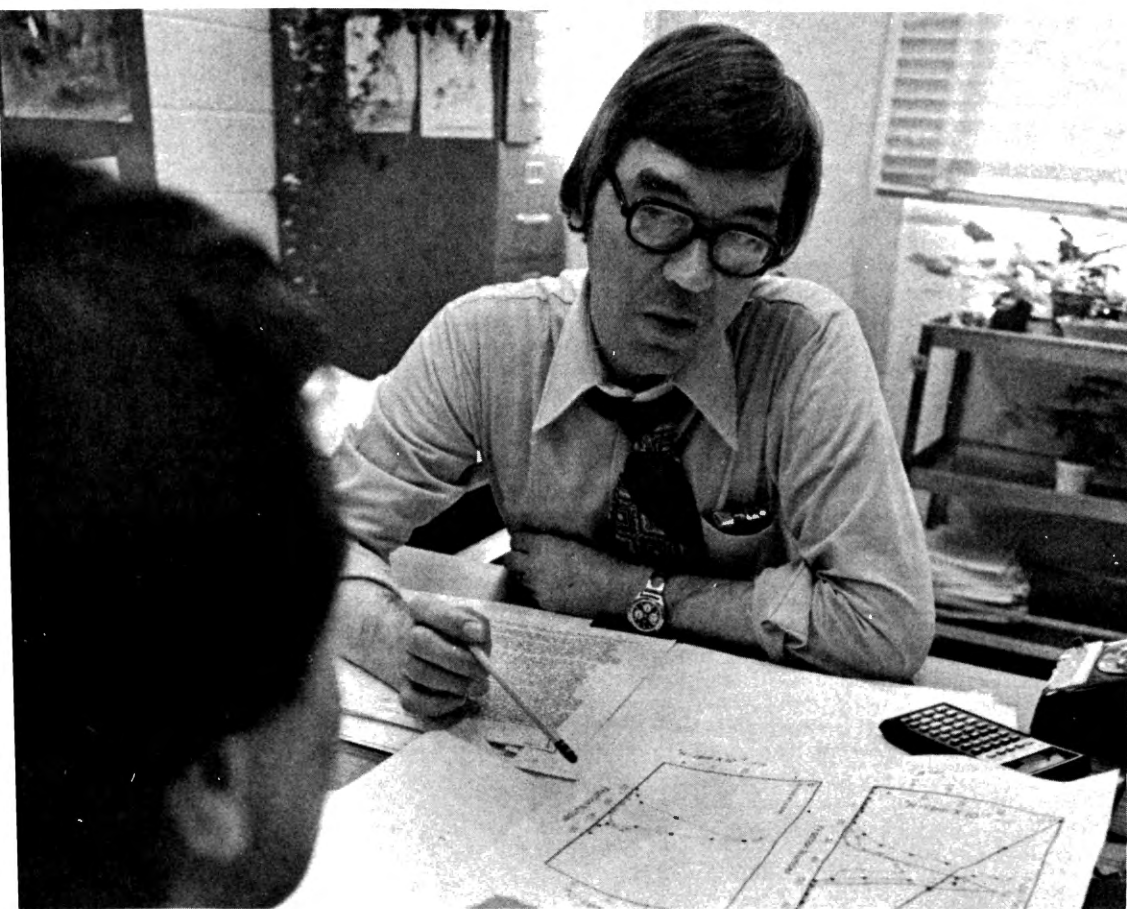
NUA 491. Clinical Practicum II. SH-11; CH-25-30. Continuation of NUA 490, however, greater emphasis is placed on development of independent decision making.

NUA 492. Clinical Practicum III. SH-11; CH-25-30. Continuation of NUA 490-491. In this course, the student must demonstrate the ability to evaluate and conduct the administration of anesthesia in a minimally supervised environment. Emphasis is on development of independent thought and judgement.

NUA 494. Clinical Practicum IV. LH-3, SH-8; CH-20. A review of all material presented in the course is offered in preparation for writing the qualifying examination for membership in the American Association of Nurse Anesthetists. All clinical requirements are completed in this course.

NUA 495. Senior Research Seminar. Critique of actual case presentation by senior students. Discussion of advanced concepts and principles of anesthetic management in special situations.

NUA 496. Senior Research Seminar. Critique of actual case presentation by senior students. Discussion of advanced concepts and principles of anesthetic management in special situations. An area (or areas) of special interest to him/her and spends at least six to nine clinical hours per week with the instructor in this area for specialized advanced work in the field. A clinical project must be chosen and written in a publishable format.



PROGRAMS IN GRADUATE STUDIES

Administrative Officers

John J. Salley, D.D.S., PH.D.

Associate Vice-President for Research and
Graduate Affairs

Daniel T. Watts, PH.D.

Chairman, MCV/VCU Graduate Council and
Dean, School of Basic Sciences

History

The first graduate degrees were awarded at the Medical College of Virginia in 1936. The original graduate programs were supervised by a committee composed of representatives from the departments which offered graduate degrees. Later a dean of graduate studies was appointed to administer these programs. In 1966, the School of Basic Sciences and Graduate Studies was established and the dean of the school assumed administrative responsibility for graduate programs.

In 1974, the Office of the Associate Vice-President for Research and Graduate Affairs was established in the university. This office now has under study various approaches for the administrative organization of all graduate programs in the university.

Graduate Council

Graduate offerings at the Medical College of Virginia are primarily under supervision of the Graduate Council which is composed of one faculty member from each department or program offering graduate degrees. In addition, one representative each from the

Schools of Medicine and Dentistry and two graduate students are members of the council.

The dean of the School of Basic Sciences serves as chairman of the Graduate Council in which capacity he assumes administrative responsibility for most of the graduate programs offered at the Medical College of Virginia.

The following list gives the current membership of the graduate council and the departments and programs offering graduate degrees:

Hugo R. Seibel	Anatomy*
Charles W. Moncure	Pathology*
Richard B. Brandt	Biochemistry*
W. Hans Carter, Jr.	Biostatistics*
Stephen F. Cleary	Biophysics*
Walter Nance	Human Genetics*
William L. Dewey	Pharmacology*
James E. Kennedy	Dentistry
Patti A. Maurer	Occupational Therapy**
Otto D. Payton	Physical Therapy**
Lawrence C. Prybil	Hospital and Health Administration***
Charles O. Watlington	Medicine
Phillip B. Hylemon	Microbiology*
Jessie V. Izzard	Medical Technology**
James F. Stubbins	Pharmaceutical Chemistry*
A. Fred Szumski	Physiology*
John H. Wood	Pharmacy and Pharmaceutics*
Barbara Munjas	Nursing**

*M.S. and PH.D. degrees offered

**M.S. degree offered

***Master of Hospital Administration degree offered

Student Representatives

Roger Mitchell Pathology
Wayne Weigand Biostatistics

The members of the graduate council are appointed for a three year term by the Associate Provost for Health Sciences upon recommendation of the department chairmen and the chairman of the graduate council. The council meets monthly or more often if necessary and establishes and maintains admission requirements and rules and procedures for awarding the M.S. and PH.D. degrees. Courses to be offered for graduate credit must have the approval of the graduate council following rules and guidelines outlined by the MCV/VCU curriculum committee. All proposals for new graduate degree programs are reviewed by the council which also consults and advises its chairman on the maintenance of academic excellence in all degree programs.

Requirements for Admission

1. The purpose of admission requirements and procedures is to encourage applications from competent students and to insure selection of those whose motivation, ability, education, character, and health qualify them to pursue successfully graduate study in preparation for a scientific career.

2. To be considered for admission in graduate studies, all applicants must have earned a Baccalaureate degree or its equivalent at the time of enrollment. Additional entrance requirements for specific programs of graduate study are stipulated by the departments.

3. The following credentials constitute an application and should be sent to:

Dean Daniel T. Watts, Chairman, Graduate Council, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 175, Richmond Virginia 23298.

- A. Application for admission on a form furnished to the applicant on request;¹
- B. Official transcripts of all undergraduate and graduate records, sent directly from the college or university registrars to the office of the dean;
- C. Letter or letters of recommendation from a teacher(s) who can evaluate the applicant's ability to carry out graduate study;

- D. A personal letter from the applicant summarizing his motivation, education, and aims in pursuing graduate study;
- E. A recent photograph, passport size;
- F. Verbal and quantitative portions of the graduate record examination are required. Advanced tests (biology, chemistry, physics, or mathematics) are recommended where appropriate. Scores are to be sent to the dean. (For information on this examination, write to: Educational Testing Service, Box 955, Princeton, New Jersey 08540).
- G. Foreign applicants who do not use english as their natural language must have a minimum total score of 550.

4. Acceptance of an applicant rests with the chairman of the Graduate Council upon recommendation of the chairman of the major department.

Registration

While most students register for the first semester, beginning in August, arrangements may be made to initiate graduate work at other times during the academic year.

Scholarships, Assistantships, and Fellowships

Graduate students may apply for a number of state or federal teaching assistantships, scholarships, or fellowships, including the A. D. Williams fellowships (college endowment). these usually pay \$3,000-3,900, plus tuition and \$500 per actual dependent, on a calendar year basis.

The Student's Advisor and Graduate Committee

Each student shall have an advisor and a graduate committee.

1. Appointment and duties of the advisor:
 - A. The advisor shall be appointed by the chairman of the graduate council upon the recommendation of the chairman of the student's major department. Appointment should be made as soon as possible after acceptance and, in any case, before registration. A change in advisor may be made by the chairman of the graduate council upon recommendation of the chairman of the major department.

¹Applications for the Master of Hospital Administration and Master of Science in Occupational Therapy are processed through the School of Allied Health Professions. Please consult this section of the bulletin for application procedures.

- B. The advisor shall be chairman of the student's graduate committee.
 - C. The advisor shall, with the graduate committee, have responsibility for the general guidance of the student.
 - D. The advisor shall work out a plan of study with the student.
 - E. The advisor shall supervise the student's research work and thesis preparation and be one of the examiners of the thesis.
 - F. The advisor shall, at the close of each academic year, submit to the graduate school office a statement covering progress of the student and recommendations as to whether his graduate studies should be continued.
2. Appointment and duties of the graduate committee:
- A. The student's graduate committee shall be appointed by the chairman for the graduate council upon recommendation of the student's advisor. Changes in the membership of the committee will be made in the same way. The committee for the PH.D. candidate shall consist of a minimum of five members as follows: (1) The student's advisor, (2) Representative members of the graduate faculty of the department in which major work is to be taken, and (3) At least two other representatives of the graduate faculty outside the major department; where feasible, from two different departments. The committee for the M.S. candidate shall consist of a minimum of three members as follows: (1) the student's advisor, (2) representative member of the graduate faculty of the department in which major work is to be taken, and (3) representative of the graduate faculty outside of the major department. The composition of the graduate committee shall be such that all significant areas of the student's course work are represented. For the purpose of examinations and thesis evaluation, an additional member may be appointed to the graduate committee, by the chairman of the graduate council.
 - B. The graduate committee shall work with the student's advisor in guiding the student's graduate program.
 - C. The graduate committee shall recommend and approve a degree program (including foreign language requirements) for the student as soon as practicable. The final degree program for the M.S. or PH.D. shall be approved by the student's graduate committee (in consultation with the student). One week after spring registration, the committee shall file, with the office of the chairman of the graduate council, the final program for any M.S. candidate who is to receive the degree at the following commencement or complete the requirements for the degree the following summer. The degree program for the PH.D. candidate shall be presented to the office at least six months before the comprehensive examinations. In approving a foreign language, the graduate committee is guided by the importance of that language in the scientific literature of the student's major subject.
 - D. The student's graduate committee shall conduct his oral comprehensive and final examinations and act as moderators for his thesis.

Requirements for Graduate Degrees

1. All full-time graduate students are expected to register for a minimum of 12 semester hour credits per semester, including research. As an example, when a student is registered for seven credits in formal courses, he is expected to undertake five credits research under his advisor or other approved faculty member.

2. The grading system shall be that indicated on page with the following additions or alterations.

- A. The grade of "Incomplete" (I) presupposes that a student is doing passing work on the completed portion of the course, but because of emergency situations, is unable to meet all of the requirements of the course by the end of the term. A mark of "Incomplete" shall not be given without an understanding between the instructor and the stu-

dent. The maximum time limit for the removal of "Incomplete" is the end of the last day of classes of the next semester following the semester (or summer session) in which the "Incomplete" was incurred. At the end of the succeeding semester, an unremoved grade of "Incomplete" is automatically changed to a failing grade.

- B. No student may take the comprehensive examination if his overall quality average is less than 2.5 or if his quality point average for courses within his major department is below 3.0.
- C. Students making a grade of "D" or "F", or who fail to pass written or oral comprehensive examinations, or thesis, or final examinations require a recommendation by their graduate committee and approval of the graduate council to continue in their programs.

3. Each foreign language examination shall be given by an examiner approved by the chairman of the graduate council. The chairman may elect to accept, as evidence of satisfactory foreign language knowledge, a comparable examination at another graduate school, a comparable examination at another graduate school.

4. Five or more copies of the thesis as required, prepared according to standards approved by the Graduate Council, shall be sent to the student's graduate committee in final form no later than May 1 before the commencement exercises at which the student expects to receive his degree. These copies are to be submitted in temporary binders. Following acceptance of the thesis and passing of the final examination, it shall be the responsibility of the candidate to have five copies of the thesis suitably bound.

5. The dean of the appropriate school will recommend the granting of a degree, only after all requirements have been fulfilled, including payment of all fees to the university, and after submission of the bound copies of the thesis. Degrees are not granted *in absentia* unless specific written request is made to the dean and permission granted by him.

Master of Science

1. Work leading to the Master of Science degree is offered in the Departments of Anatomy, Biochemistry, Biophysics, Biostatistics, Genetics, Medical Technology, Microbiology, Nursing, Occupational Therapy, Pathology, Pharmaceutical Chemistry, Pharmacology, Pharmacy and Pharmaceuticals, Physical Therapy, and Physiology. The professional Master of Hospital Administration degree is offered by the Department of Hospital and Health Administration.

2. A minimum of 24 credit hours, exclusive of research credits, are required for the Master of Science degree. Not more than one-third of these credit hours may be transferred from another institution and applied to the degree. A time limit of five calendar years, beginning at the time of first registration, is placed on work to be credited toward the Master of Science degree.

3. Each department at its own discretion, may stipulate one foreign language requirement for the master's degree. It is strongly recommended that the student satisfy the foreign language requirement as soon as possible after beginning his program. He must do so at least two months before submission of the thesis.

4. Each student conducts a research study under the guidance of his advisor. This study is reported in a thesis, prepared in acceptable form and style. On approval of the thesis by the advisor, the student submits five or more copies as required to his graduate committee.

5. The thesis is examined by the student's graduate committee members acting as moderators. The council chairman may appoint one additional moderator from the faculty of the MCV Campus or some other institution. An external moderator is selected by reason of his special knowledge and distinction in the field of the candidate's work.

6. Each moderator shall receive a copy of the candidate's thesis and shall decide on its acceptability. The moderators may confer with each other before making their decision. Each student's advisor shall report to the chairman of the Graduate Council that the thesis is acceptable or not acceptable. The thesis is approved only if the moderators accept it unanimously.

7. On approval of the thesis, the student appears for a final oral examination by the advisor and the thesis moderators. The final examination shall be open to the faculty and its time and place—together with the candidate's

name, department, and title of thesis—shall be announced at least seven days in advance.

8. A favorable vote of the graduate committee with no more than one negative vote shall be required to pass the oral examination. All members of the committee and the council chairman or a faculty member representing him will attend the examination and will cast a vote.

9. The candidate, having fulfilled all the requirements for the Master of Science degree, is recommended to the president for the degree.

Master of Science in Hospital Pharmacy

1. Candidates for graduate study leading to the Master of Science degree in hospital pharmacy are selected from graduates of schools of pharmacy accredited by the American Council on Pharmaceutical Education. Before the degree may be awarded, the student must show evidence for the completion of 1,920 hours of acceptable hospital pharmacy internship or its equivalent.

2. Candidates for the Master of Science degree in hospital pharmacy carry out a scientific experimental research study under the guidance of their advisor and prepare an acceptable thesis reporting this study. Comprehensive written and oral examinations are required. Foreign language requirements and details of the thesis examination and final oral examination are the same as for the regular Master of Science degree.

Doctor of Philosophy

1. Advanced graduate study leading to the Doctor of Philosophy degree is offered in the Departments of Anatomy, Biochemistry, Biophysics, Biostatistics, Genetics, Microbiology, Pathology, Pharmaceutical Chemistry, Pharmacy and Pharmaceuticals, Pharmacology, and Physiology.

2. At least two years in residence are required for students holding the M.S., M.D., or D.D.S. degrees and at least three years for those with the baccalaureate degree only. A first time limit of seven calendar years, beginning at the time of first registration, is placed on work to be credited towards the Doctor of Philosophy degree.

3. A student becomes an applicant for the doctorate when he has been admitted as such to graduate studies. No assurance is given that he will become a candidate for the Ph.D. degree until he has given evidence of superior scholarship.

Before admission to candidacy for the doctorate, the student must have satisfied the language requirements and completed required course work; he must have passed the comprehensive written and oral examinations also. A student is admitted to candidacy by the chairman of the Graduate Council upon recommendation of his advisor and his graduate committee, with the approval of his major department.

4. The student must satisfy an examiner or examiners approved by the chairman of the Graduate Council that he has a reading knowledge of a minimum of one foreign language. (Each department has the option of requiring a second language if it chooses.) It is strongly recommended that the student satisfy the foreign language requirement as soon as possible after beginning his program. He must satisfy this requirement at least two months before the written comprehensive examination can be taken.

5. Upon satisfactory completion of all required, formal course work and successful passing of his foreign language examination(s), the student takes written and oral comprehensive examinations. The written examination is administered by the student's major department. The student's committee may require that he have a minor field of study, in which case he will also take a written comprehensive examination given by that department. In the event of failure in the written comprehensive examination in the major or minor department, the student, with the approval of the graduate council, may be permitted to repeat the written examination in the department in which the failure occurred.

After successfully passing the written examination(s), the student will take the oral portion within one month. This examination is conducted by the student's graduate committee. A favorable vote of the graduate committee with no more than one negative vote (all members being required to vote) shall be required to pass the oral portion of the comprehensive examination. The chairman of the Graduate Council or a faculty member representing him will attend all oral examinations and will cast a vote.

If a student passes the written comprehensive examination, but fails the oral part, he may be re-examined only in the oral part with the approval of the graduate council.

The oral comprehensive examination is open to all members of the faculty. Faculty members in attendance may ask questions of the candidate, but their questions shall not be presented until after the graduate committee has completed its questions. Faculty members other than those on the committee shall not vote on the success or failure of the candidate. The time and place of the examinations shall be posted at least seven days in advance.

The examination must be successfully completed at least six months before submission of the dissertation.

6. The student must conduct a substantial original investigation under the supervision of his advisor and prepare a dissertation reporting the results of this research and analyzing its significance in relation to existing scientific knowledge.

7. When the dissertation has been completed and the advisor considers it acceptable and all the requirements satisfied, he so notifies the council chairman. Five copies of the dissertation, or more as required, in acceptable form and style are submitted to the graduate committee.

8. The moderators for the dissertation are the student's graduate committee. The chairman of the Graduate Council may appoint an additional moderator from the faculty of the MCV Campus or another institution. These moderators decide upon the acceptability of the candidate's dissertation. A favorable unanimous vote is required to approve the dissertation and all examiners are required to vote.

9. If the moderators accept the dissertation, the candidate appears before them for a final oral examination. This examination is open to all members of the faculty. The final oral examination will be limited to the subject of the candidate's dissertation and related matters. A favorable vote of the candidate's moderators, and no more than one negative vote, shall be required for passing the final oral examination. All moderators must vote. The council chairman or a faculty member representing him will attend all oral examinations and cast a vote. There shall be prior announcement of the candidate's name and department, and title of dissertation, together with the day, place, and hour of the final oral examination at least seven days in advance.

10. The candidate, having fulfilled all of the requirements for the degree of Doctor of Philosophy, is recommended to the president for the degree.

SPECIAL STUDENTS

Students who are not applicants for any particular degree may be admitted for individual courses. Permission to register for the course must be obtained from the instructor or department concerned. Employees who qualify may register for a single course per semester.

SUMMER REGISTRATION

Most graduate students devote 10 or more weeks during the summer to full-time research. Students registered for research credit are billed at the established tuition rate.

TRAINING AS A TEACHER

Currently there is increased emphasis on competence as a teacher as well as an investigator for faculty members of colleges, universities, and professional schools. In addition to practical experience and laboratory teaching and lecturing, students should give consideration to courses offered by VCU School of Education concerning learning theory, instructional strategy, and educational technology in adult education.

A complete listing of courses in education available in the university can be obtained from the School of Education, Office of Graduate Studies, 914 Park Avenue, Richmond, Virginia 23284. Telephone (804) 770-6525.

COMBINED M.S./PH.D. AND M.D. OR D.D.S. DEGREE PROGRAMS

Many future physicians and dentists, especially those interested in academic and research careers, need to start in depth training in research while still in school or residency training. This need can be effectively met by completing the requirements for the M.S. or Ph.D. degree concurrently with the study of medicine or dentistry. The MCV/VCU medical and dental curricula, with free time for elective courses and research, provide an excellent opportunity for interested students to enter a combined M.S./Ph.D.-M.D. or D.D.S. program.

Admission of medical and dental students regularly enrolled in these schools to this combined degree program is processed through the office of the chairman of the Graduate Council by established procedures. The Medical College Admission Test or Dental Aptitude Test is accepted in lieu of the Graduate Record Examination. Undergraduate transcripts and references are obtained from the professional school. No application fee is

required since the student is already regularly enrolled in a school of the university.

The requirements for a combined professional school-graduate school degree in basic sciences are equivalent to those required of students seeking a graduate degree alone and are determined by the individual department. One of the graduate committee members is the student's professional school advisor.

The minimum residence requirement is one year for the M.S. and two years for the Ph.D. degree. Twenty-four weeks of graduate work (two summers) will be considered equivalent to one year of residence. A time limit of five calendar years for the M.S. and seven calendar years for the Ph.D. degree, beginning at the time of first registration in the graduate school, applies to work to be credited toward degrees for students in combined programs.

Medical and dental scientists often need broad training in several of the basic disciplines to meet their objectives. This can be arranged through the appointment to the graduate committee of members from both basic sciences and clinical departments. Admission to graduate study and development of an interdisciplinary program will be channeled through the basic science department in which the student indicates a major interest and will conform to all policies and procedures established by the Graduate Council. Courses may be taken in a broad area; research will normally be concentrated in one laboratory or department with consultation and advice from related areas and departments through the student's graduate committee.

DEPARTMENTAL RESEARCH INTERESTS

The graduate course offerings and the list of graduate faculty for each department offering graduate work are given in the appropriate school sections of this *Bulletin*. The pages on which these may be found and brief statements of the research interests of the faculties of the departments follow:

School of Basic Sciences

1. Department of Anatomy.....page 87.
Research Interests: Ultrastructural studies of ovary, oviduct, cervix, and uterus; maternal accommodations to implantations; experimental embryology; teratological aspects of drug metabolism; control of corpus luteal life span; uterine glycogenesis; comparative neuroanatomy; neurotransmitters; neurophysiology of eye movement; eye differentiation; synaptology; maturation in central nervous system; renal transplantation rejection; ontogeny of the immune system; immunohematology; immune dys-

function and malignancy; carcinogenesis; oxyhemoglobin affinities; and cytosomes in alveolar cells.

2. Department of Biochemistry.....page 88.
Research Interests: Enzyme chemistry; mitochondrial function; cellular control mechanisms; isozymes; cancer; thiamine metabolism; biogenesis of mitochondria; genetic control of development and differentiation; nuclear proteins; somatomedin; neuro-chemistry; intracellular protein catabolism; protein and nucleic acid metabolism; steroid and phospholipid metabolism; fluorescence and submicroanalysis; and physical biochemistry.

3. Department of Biophysics.....page 88.
Research Interests: Structures and function of proteins and nucleic acids; biophysical characterization of macromolecules; effects of ionizing and non-ionizing radiation on the eye and other organs; photobiology; biophysical characterization of artificial and biological membranes; structural and functional analysis of subcellular organelles of normal and pathological tissues.

4. Department of Biostatistics.....page 89.
Research Interests: Epidemiological and operational research in health care, determinants of demand in primary care, analysis of observational studies, analysis of survival data with concomitant information, response surface design and analysis, linear statistical models, non-parametric function estimation and related areas, pattern recognition, design and analysis of clinical trials, multivariate analysis, analysis of survival data-survival curves, non-parametric statistics, determinants of physician utilization, and epidemiological studies.

5. Department of Human Genetics page 90.
Research Interests: Clinical cytogenetics, cell hybridization, somatic cell genetics, human population genetics, genetic linkage studies, genetic polymorphisms, delineation of genetic syndromes, hereditary deafness, human biochemical genetics, twin studies.

6. Department of Microbiology.....page 90.
Research Interests: Antibiotics and chemotherapy; biophysical characterization of biological macromolecules; animal virology; cellular and tumor immunology; host-parasite relations in bacterial and viral diseases; microbial biochemistry, ecology, genetics, and physiology; molecular biology; membrane transport; cellular differentiation; X-ray crystallography; parasitology; cellular oncology; cancer chemotherapy; immunopotentiality; genetic mechanisms and regulation of prokaryotic and eukaryotic cells; mycology, immunobiology; and medical bacteriology.

7. Department of Pharmacologypage 91.
Research Interests: Drug metabolism; pharmacodynamics; psychopharmacology; cardiovascular pharmacology; clinical pharmacology; toxicology; drug evaluation; and biochemical and central nervous system pharmacology.

8. Department of Physiologypage 93.
Research Interests: Motor and sensory systems; behavior; endocrine regulation of reproduction and thyroid systems; gastrointestinal secretory systems; oxygen transport and delivery systems; topics in general physiology, including mechanisms of solute transport in epithelial and synthetic membrane sys-

tems; and excitation-contraction coupling in cardiac, skeletal, and smooth muscle.

School of Medicine

Department of Pathology.....page 37.
Research Interests: Biochemical and clinical applications of enzyme and protein immobilization, clinical enzymology, techniques in clinical chemistry, red cell antigens, computer diagnosis, oral carcinogenesis, mycoplasma-bacterial interactions, bacterial L-forms, immunohematology, immunotherapy of cancer, cerebral microcirculation, blood substitutes, leukemia, sickle cell disease, amebic meningoencephalitis, trace metal metabolism in tumors, drug distribution, diagnostic immunoassays, inflammation, fever, neuro-chemistry and ultrastructure of brain, infectious diseases, paleopathology, and diagnostic virology.

School of Pharmacy

1. Department of Pharmaceutical

Chemistry.....page 64.
Research Interests: Synthesis and biological evaluation of new compounds, determination of relationships between chemical structure and biological activity, studies on modes of drug action, rational design of new drugs, bacterial growth kinetics in the presence of antibiotics. Drug classes under investigation include analgesics, anticoagulants, anti-malarials, antimetabolites, antineoplastics, anti-sickling agents, hypocholesteremics, hypoglycemics, hypotensives, neurotransmitters, peptide antibiotics, psychotropic agents, reversible and irreversible enzyme inhibitors, urolithiasis inhibitors.

2. Department of Pharmacy and

Pharmaceutics.....page 65.
Research Interests: Bioavailability studies, factors governing release of drugs from solid dosage forms, micellar nature of drug solutions, drug-protein binding interactions, effects of saturated and competitive metabolism on pharmacokinetics, clinical pharmacokinetics including computer modeling of pharmacokinetics in man and use of individual pharmacokinetic parameters in optimizing dosage regimens, development of analytical methodology for drugs in biological fluids, isolation of new drugs from natural sources.

School of Nursing.....page 69.

Research Interests: Initial mothering patterns, diabetic health services survey, pregnancy perceptions and outcomes, human loneliness, chronic mental illness behavior, nurse reaction to technical innovation, quality of nursing care evaluation, simulation in assessing students, charting practices survey, student self-esteem and teaching, nosocomial infection, nursing personnel functions.

School of Allied Health Professions

1. Department of Hospital and

Health Administration.....page 120.
Research Interests: Emergency medical services systems evaluation, community health planning evaluation, institutional health planning evaluation, determination of health needs, determination of health manpower requirements, hospital capital financing, contractual relationships between physicians and hospitals, hospital role and programs in ambulatory and primary medical care, community participation in health policy formulation and decision making.

2. Department of Medical

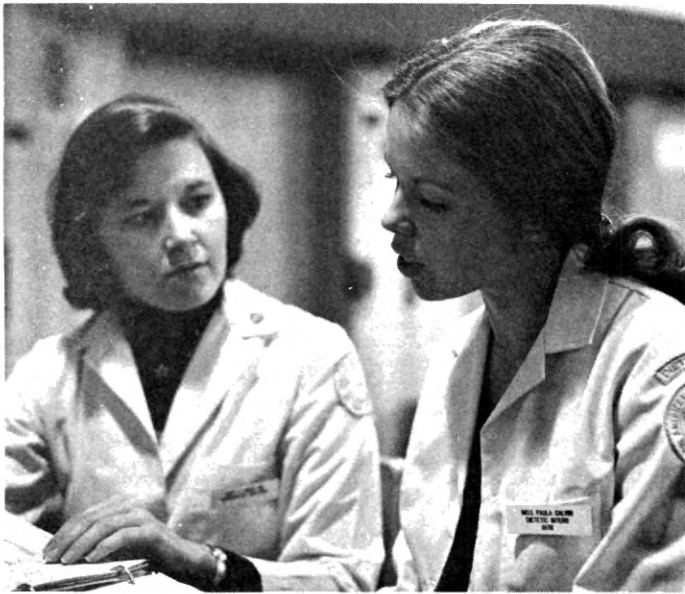
Technology.....page 97.
Research Interests: Evaluation procedures for student clinical performance, clinical enzymology, perinatal biochemistry, technique development in microbiology, slow virus diseases, teacher preparation for programs in medical technology.

3. Department of Occupational

Therapy.....page 105.
Research Interests: Behavior modification in occupational therapy, occupational therapy for sensory-integrative problems, developmental therapy, development of research instruments, meaning of activity, occupational therapy credentialing process, self-help devices.

4. Department of Physical

Therapy.....page 115.
Research Interests: Motor learning, electromyographic kinesiology, therapeutic kinesiology, biomechanics, joint afferents, basal ganglia, neural control of locomotion, motor unit rate coding and recruitment, allied health education.



BLOOD BANKING, CYTO-TECHNOLOGY, DIETETIC INTERNSHIP, EEG TECHNOLOGY

Blood Banking

PROGRAM

The Blood Banking Program consists of 12 months of formal training in advanced blood banking. Two weeks vacation and a leave of one week in October, November, or December are allowed.

The MCV Blood Bank provides the blood banking service for the MCV Hospitals. It prepares and provides all blood and blood components.

The Blood Bank is accredited by the American Association of Blood Banks and is a member of the Association's Clearing House system. The special studies laboratory handles many problem cases from outside MCV and is one of the reference laboratories of the AABB.

The blood banking students' training consists of practical work in the various departments of the Blood Bank, formal lectures, and alternating weekly seminars and journal club, all held at the MCV Campus.

ENTRANCE REQUIREMENTS

The applicant must have:

1. (a) Certification in medical technology by the Board of Registry of Medical Technologists of ASCP.

OR

(b) A bachelor's degree with a major in one of the biological sciences plus a minimum of one year's experience in a blood bank accredited by the American Association of Blood Banks.

2. Submitted a transcript of college credits and medical technology credits.

3. A completed application, including personal recommendations regarding ability, knowledge, and moral character. The transcript of record, application form, and recommendation letters must be submitted to the director of the course before September 30.

CURRICULUM AND SCHEDULE FOR STUDENTS

1. Classes begin each year in January.
2. The course runs for 52 weeks.
3. Lectures are given in two semesters.
4. Each student rotates through the various sections of the Blood Bank, keeping a notebook of all bench work done. This is checked monthly by the teaching and technical supervisor of the Blood Bank.

5. The laboratory training of the course consists of performing under supervision the various tests and quality control procedures conducted in the various subsections of the Blood Bank, including the clerical and research areas. In addition, the student spends one week in the serology laboratory.

6. Bimonthly seminars are held to review the current literature with the students in the

course, the technical staff, and residents in clinical pathology.

REFERENCE SOURCES

Library facilities are available through the Tompkins-McCaw Library, pathology department library, and the Office of the Director of the Blood Bank.

EXPENSES

Currently, there is no tuition as this is an inservice training similar to an internship. White uniforms are required. A monthly stipend equivalent to a technologist's salary is sometimes available.

CERTIFICATION

Students receive a certificate of training in blood banking from Virginia Commonwealth University upon satisfactory completion of the course. As the course has been approved by the American Association of Blood Banks and the American Medical Association, the graduate is eligible to take the examination for certification in blood banking given by the Board of Registry of Medical Technologists.

FACULTY

Professors: Vennart (Chairman, Division of Clinical Pathology); Allison; Fisher; Hossaini (Program Director, Course in Blood Banking); Santos; Young

Associate Professors: Dalton; Escobar; Lim

Assistant Professor: Hunter

Teaching and Training Supervisor: Dabbs

Cyto-Technology

PROGRAM

This consists of 12 months of formal training for students to become certified in cyto-technology by the American Society of Clinical Pathologists. The course is divided into six months of didactic study and six months of practical experience in an accredited laboratory. The student is then eligible to take the examination for certification as a registered cyto-technologist.

CLASSES

Students are accepted each year in September. They attend lectures twice each week for six months. These are didactic presentations about the cells exfoliated from the various tracts and cavities of the human body.

Training also includes supervised experience in the techniques of preparing cellular material for screening and detection of malignant disease, the study of prepared specimens illustrating abnormal cells, and observation of current case material. (This is done by regularly scheduled, daily 30- to 60-minute conferences with staff pathologists.)

ENTRANCE REQUIREMENTS

1. Sixty hours of college credits from an accredited college, at least 12 of which must be in biology. Colleges accredited by the national or state accrediting agencies are satisfactory. Candidates with academic degrees are given preference. Foreign nationals are not considered for this program.

2. A qualifying certificate obtained from the National Accrediting Agency for Clinical Laboratory Sciences, 222 South Riverside Plaza, Chicago, Ill. 60606.

3. Mental and physical aptitude for technology training.

EXPENSES

There is no tuition fee. Students must purchase their own books, which cost approximately \$35. White uniforms and shoes are recommended, but are not required. Campus housing and meal plans are available at moderate cost.

CERTIFICATION

Students completing the course satisfactorily receive a certificate of training from Virginia Commonwealth University. After six months of practical experience (see above), they are eligible to take the examination given by the American Society of Clinical Pathologists for certification in cyto-technology.

FACULTY

Professors: Frable (Director); Kay

Chief Cyto-Technologists: Outlaw; Pedigo

Dietetic Internship

The dietetic internship program was organized in 1929 through the efforts and interest of the dietary staff. The first group, four students, completed the six-month program in November, 1929. The American Dietetic Association approved the curriculum, and these graduates were eligible for membership in this professional organization.

With growing interest in dietetics, the program grew along with the college. It has continued to be approved by the American Diet-

etic Association. At present, the internship is an 11-month course. Twelve interns are accepted each year.

Interns receive graduate level training in food service administration, clinical nutrition, clinical research, and community nutrition. Teaching experience is offered as an integral part of all areas of learning, and interns are assigned to the various units in the hospitals on a scheduled rotation. Under the supervision of professional dietitians and food service managers, interns are given individual instruction and support in assignments in all areas. Various affiliations are planned which supplement the intern's learning experiences. The educational opportunities in a medical center are such that any young person interested in this health profession can choose from a variety of areas in nutrition for future employment.

ALLOWANCE FOR EDUCATIONAL EXPENSES

The present educational stipend is \$250 per month with federal and state taxes deducted. Health care is provided through the student health service.

FEES

A fee of \$10 is payable at registration.

HOUSING AND MEALS

Rooms are available in residence halls on a year's basis. Meals may be secured at minimum cost in one of the cafeterias or the student center.

WORK AND VACATION

Interns are scheduled for 40-hour weeks (five eight-hour days). One of these days is a class day with academic activities. Two weeks' vacation and two holidays are allowed per year.

CERTIFICATE

Persons satisfactorily completing the course receive a certificate from Virginia Commonwealth University. Graduates are recommended for membership in the American Dietetic Association and upon successful completion of an examination are eligible to become registered dietitians.

ENTRANCE REQUIREMENTS

Candidates for admission must have received a bachelor's degree or an advanced degree from an accredited college or university and have taken all courses required by the American Dietetic Association for entrance into the dietetic internship program.

APPLICATION

Application forms are available from most college and university home economics departments or may be ordered directly from the Director of the Dietetic Internship, MCV Campus of Virginia Commonwealth University. These should be completed and given to the applicant's advisor or department head to be sent to: Director of the Dietetic Internship, MCV Hospitals, Virginia Commonwealth University, MCV Station, Box 294, Richmond, Virginia 23298, by March 1. Appointments are made in April.

FACULTY

Director: Robbins, R. D.

Director, Food Services: Ginns

Clinical Instructor, Administration: Hill, R. D.

Clinical Instructor, Therapeutics: Honaker, R. D.

Senior Research Dietitian: Jennings, R. D.

Nutritionist, Outpatient Clinics: Seiber, R. D.

Pediatric Dietitian: Saunders, R. D.

Head, Therapeutic Dietitians: Henrichs, R. D.; James, R. D.

EEG Technology

PROGRAM

The Electroencephalographic (EEG) Technology course consists of 11 months (July to June) of formal training; combining lectures, conferences, and extensive on-the-job practical conferences and extensive on-the-job practical training. Students receive two weeks leave at Christmas plus one week spring vacation. The course is divided into theoretical and practical training in an accredited laboratory. Training is on a 40-hour-a-week basis.

CLASSES

Students are accepted in July each year. They attend lectures in neuroanatomy, neurophysiology, neuropathology, basic electronics, basic medical terminology, and history taking. Proper head marking, application of electrodes to the International 10-20 Electrode System and proper use of all different types of electrodes are taught. Students attend clinical

neurology conferences and EEG interpretation sessions with the supervisory physicians (electroencephalographers).

ENTRANCE REQUIREMENTS

Applicants for admission must have a high school diploma and be in the upper half of their graduating class. One or two years of college training is useful.

EXPENSES

There is no tuition fee. Campus housing and meal plans are available at moderate cost. All dormitory students are required to have the Student Health Service (currently \$52 per year). White uniforms and shoes are required.

CERTIFICATION

Students completing the course satisfactorily receive a certificate of training from Vir-

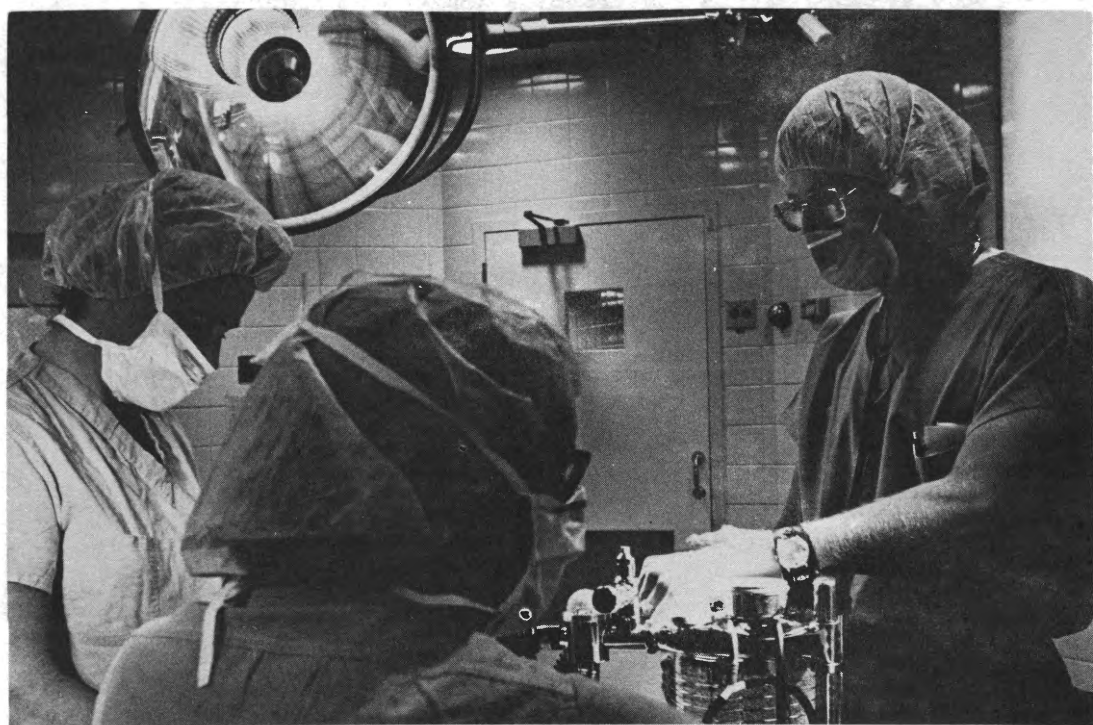
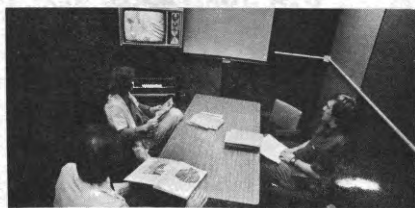
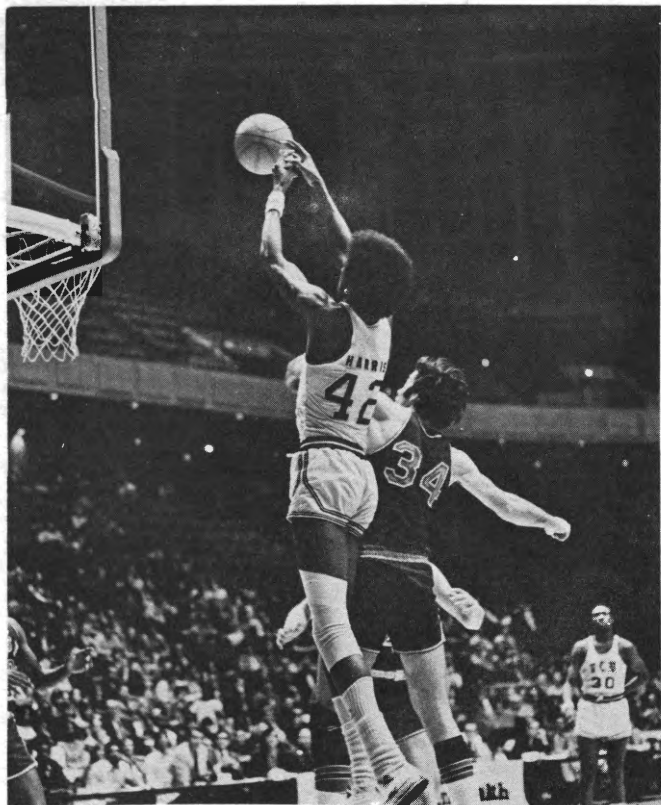
ginia Commonwealth University. They are then eligible to take the examination given by the American Board of Registration of EEG Technologists.

APPLICATION

Application forms should be obtained before April 30 from Dr. Cary G. Suter, Department of Neurology, Medical College of Virginia, Virginia Commonwealth University, MCV Station, Box 698, Richmond, Virginia 23298.

FACULTY

Professor: Suter (Chairman, Department of Neurology and Director, EEG Technology)
 Assistant Professors: Calabrese; Grindal; Isaacs
 Clinical Assistant Professor: McGee
 Instructor: Isrow
 EEG Supervisor: Beverly



BOARD, ADMINISTRATION, AND FACULTY

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Director, Central Animal Facility
Martha B. Conway, LL.B.
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Director of University Libraries
J. Craig McLean, B.A., M.S.L.S.
Director, Tompkins-McCaw Library
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Director of Auxiliary Enterprises and University Services
H. Stephen Moore, Jr., B.S.
Director of University Personnel
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Assistant Director, Financial Aid, MCV
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Director, Student Financial Aid
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Manager, Information Services
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Ray C. Williams
Director, Central Biomedical Instrumentation Shop
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Director, Educational Planning and Development Program, MCV

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- William Haneke, B.S., M.H.A.
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Assistant Director of Professional Services
- Frank W. Scott, B.S., M.S.H.A.
Director of Professional Services

FACULTY

Faculty listings include appointments made by the Board of Visitors on March 18, 1976.

- Abbey, Louis M. (1971)*, *Associate Professor of Oral Pathology*, A.B., 1963, Earlham College; D.M.D., 1967, M.S., 1971, Tufts University.
- Abbott, David M. (1975), *Assistant Professor of Occlusion*, B.S., 1968, Madison College; D.D.S., 1972, University of North Carolina; M.S.D., 1975, University of Minnesota.
- Abell, Edward (1974), *Assistant Professor of Dermatology*, M.B.B.S., 1964, M.R.C.S.-L.R.C.P., 1964, M.R.C.P., 1968, St. Bartholomew's Hospital Medical College, University of London.
- Abernathy, Ted R. (1974), *Clinical Instructor in Pediatrics*, B.A., 1964, Virginia Military Institute; M.D., 1970, Medical College of Virginia.
- Aceto, Mario D. (1973), *Associate Professor of Pharmacology*, B.S., 1953, Providence College, Rhode Island; M.S., 1956, University of Maryland; Ph.D., 1958, University of Connecticut.
- Adams, Max D. (1971), *Assistant Professor of Pharmacology*, B.S., 1965, West Virginia University; M.S., 1968, Ph.D., 1971, Purdue University.
- Adams, Randy (1974), *Clinical Instructor in General and Preventive Dentistry*, B.S., 1968, Hampton Institute; D.D.S., 1972, Howard University College of Dentistry.
- Aghdami-Nasr, Aliasghar (1973), *Assistant Professor of Anesthesiology*, M.D., 1957, Tabriz University Medical School, Iran; D.A., 1966, Royal College of Physicians and Surgeons of England.
- Akers, George R. (1975), *Clinical Instructor in Pharmacy*, B.S., 1967, Medical College of Virginia.
- Alexander, Jr., Edward Lee (1968), *Associate Clinical Professor of Medicine and Family Practice*, B.A., 1948, Yale University M.D., 1952, Johns Hopkins University.
- Alexander, John M. (1975), *Assistant Professor of Oral Surgery*, D.D.S., 1966, Medical College of Virginia.
- Alexander, Ricardo (1974), *Assistant Clinical Professor of Oral Surgery*, B.S., 1961, University of Florida; D.D.S., 1965, Medical College of Virginia.
- Allen, William H. (1973), *Assistant Clinical Professor of Pedodontics*, D.D.S., 1967, Emory University Dental School.
- Allerton, William S. (1971), *Clinical Professor of Psychiatry*, B.M., 1947, M.D., 1948, Northwestern University.
- Allison, Marvin J. (1961), *Professor of Clinical Pathology*, B.A., 1942, College of William and Mary; M.A., 1947, Ph.D., 1960, University of Pennsylvania.
- Alpern, Frederick P. (1971), *Clinical Instructor in Pediatrics*, B.S., 1962, Columbia University; M.D., 1966, Medical College of Virginia.
- An, Teisa (1976), *Assistant Professor of Pathology*, B.S., 1961, M.D., 1965, Osaka University; Ph.D., 1972, University of Pittsburgh.
- Anderson, Jr., Harry P. (1956), *Lecturer in Legal Medicine*, B.A., 1947, LL.B., 1948, University of Virginia.
- Anderson, R. David (1973), *Clinical Instructor in Pharmacy*, B.S., 1947, Medical College of Virginia.
- Anderson, Jr., Thomas F. (1969), *Assistant Professor of Medical Education, Department of Family Practice*, B.A., 1960, College of William and Mary; M.H.A., 1969, Medical College of Virginia of Virginia Commonwealth University.
- Andrako, John (1956), *Assistant Provost for Academic and Professional Affairs and Academic Planning; and Professor of Pharmaceutical Chemistry*, B.S., 1947, M.S., 1949, Rutgers University; Ph.D., 1953, University of North Carolina.
- Andrews, Jack Preston (1963), *Assistant Clinical Professor of Pediatrics*, M.D., 1957, Medical College of Virginia.
- Ansell, Jr., Burness F. (1967), *Clinical Instructor in Internal Medicine*, B.S., 1953, Hampden-Sydney College; M.D., 1957, Medical College of Virginia.
- Anthony, Susan S. (1975), *Instructor in Continuing Medical Education*, B.S., 1967; M.S., 1969, Miami University, Oxford (Ohio).

*Year of first appointment.

- Archer, Gordon L. (1975), *Assistant Professor of Medicine*, B.A., 1965, Washington and Lee University; M.D., 1969, University of Virginia.
- Archer, Jr., John S. (1958), *Clinical Instructor in Otolaryngology*, B.A., 1940, University of Virginia; M.D., 1943, Medical College of Virginia.
- Arginteanu, Jules (1964), *Professor of Psychiatry*, B.A., 1956, Antioch; M.A., 1960, Ph.D., 1961, State University of Iowa.
- Armistead, R. Lewis (1972), *Assistant Clinical Professor of Periodontics*, D.D.S., 1966, Medical College of Virginia.
- Armstrong, Richard H. (1972), *Assistant Clinical Professor of Psychiatry*, B.S., 1953, Maine Maritime Academy; M.D., 1961, Medical College of Virginia.
- Armstrong, Jr., Robert H. (1971), *Clinical Professor of Radiology*, M.D., 1943, M.S., 1953, George Washington University.
- Arnold, Gayle G. (1965), *Associate Clinical Professor of Pediatrics*, A.B., 1942, Johns Hopkins University; M.D., 1945, University of Maryland.
- Arthur, Robert Miller (1965), *Assistant Professor of Medicine*, A.B., 1950, University of North Carolina; M.D., 1954, Duke University.
- Ashworth, John S. (1964), *Clinical Instructor in Medicine*, B.A., 1954, Princeton University; M.D., 1958, Columbia University.
- Astruc, Juan A. (1967), *Professor of Anatomy*, M.D., 1957, Ph.D., 1959, University of Granada, Spain.
- Atiyeh, Wasfi A. (1960), *Assistant Clinical Professor of Otolaryngology*, B.A., 1948, M.D., 1952, American University of Beirut.
- Atkinson, Gerald W. (1966), *Clinical Instructor in Neurology*, B.A., 1952, Lincoln Memorial University; M.D., 1956, Medical College of Virginia.
- Attix, Frank H. (1973), *Assistant Clinical Professor of Radiation Physics*, A.B., 1949, University of California; M.S., 1953, University of Maryland.
- Atwill, William H. (1968), *Assistant Clinical Professor of Surgery (Urology)*, B.S., 1953, Virginia Military Institute; M.D., 1960, University of Virginia.
- Austin, Leonard A. (1962), *Clinical Instructor in Pediatrics*, B.S., 1953, Richmond Professional Institute; M.D., 1959, Medical College of Virginia.
- Bach, Carole A. (1968), *Assistant Professor of Medical-Surgical Nursing*, B.S.N., 1966, Indiana University; M.S.N., 1968, Washington University.
- Bacon, Franklin (1961), *Associate Dean of Student Life and Associate Professor of Adult Education*, A.B., 1942, University of Missouri; M.A., 1950, University of Chicago.
- Bailey, Jr., Robert L. (1964), *Clinical Associate in Medicine*, B.S., 1933, University of South Carolina; M.D., 1937, University of Virginia.
- Baker, Sharon D. (1973), *Instructor in Maternal-Child Nursing*, B.S., 1972, Southern Illinois University; M.S., 1973, Emory University.
- Bakerman, Seymour (1968), *Professor of Clinical Pathology*, B.A., 1949, New York University; M.S., 1952, Ph.D., 1956, Purdue University; M.D., 1959, Western Reserve University.
- Balster, Robert L. (1973), *Assistant Professor of Pharmacology*, B.S., 1966, University of Minnesota; Ph.D., 1970, University of Houston.
- Bampton, Betsy A. (1965), *Associate Professor of Maternal-Child Nursing*, A.A., 1957, Frostburg State College; B.S., 1960, Medical College of Virginia; M.S., 1965, University of Maryland.
- Banks, Jr., William L. (1965), *Professor of Biochemistry and Surgery*, B.S., 1958, Rutgers University; M.S., 1961, Bucknell University; Ph.D., 1963, Rutgers University.
- Baran, Mildred P. Fiorentino (1975), *Clinical Instructor in Pediatrics*, B.S., 1968, Fairleigh Dickinson University; M.D., 1972, Downstate Medical Center.
- Barker, Thomas C. (1967), *Dean, School of Allied Health Professions, and Professor of Hospital and Health Administration*, B.S., 1954, M.A., 1960, Ph.D., 1963, State University of Iowa.
- Barnes, James M. (1965), *Assistant Clinical Professor of Psychiatry*, A.B., 1951, Vanderbilt University; M.D., 1958, Medical College of Virginia.
- Baroody, Jr., Samuel G. (1975), *Associate Clinical Professor of Oral Pathology*, B.S., 1957, The Citadel; D.D.S., 1962, Medical College of Virginia.
- Barr, William H. (1972), *Professor and Chairman, Department of Pharmacy and Pharmaceuticals*, B.S., 1960, Pharm. D., 1961, Ph.D., 1966, University of California, San Francisco.
- Barrett, Frances E. (1956), *Assistant Professor of Medicine*, M.D., 1949, University of Virginia.
- Barringer, Michael L. (1967), *Clinical Instructor in Pediatrics*, B.A., 1952, University of North Carolina; M.D., 1962, Bowman Gray Medical School.
- Barron, Edmund G. (1973), *Assistant Professor of Dentistry*, B.S., 1953, University of North Carolina; D.D.S., 1960, Medical College of Virginia; M.P.H., 1966, University of North Carolina.
- Barth, Wanda J. (1974), *Director of Nursing Services, MCVH, and Assistant Professor of Nursing*, B.S., 1966, University of Arkansas; M.S., 1967, University of Florida.
- Batchelder, Harold C. (1968), *Associate Professor of Psychiatry (Social Work)*, B.A., 1952, Elon College; M.S.S.W., 1960, Richmond Professional Institute.
- Bates, Jr., Robley D. (1954), *Assistant Clinical Professor of Medicine*, B.A., 1930, University of Richmond; M.D., 1934, Medical College of Virginia.

- Bath, Raymond J. (1973), *Assistant Professor of Legal Medicine and Pharmacology*, B.S., 1962, John Carroll University; M.S., 1967, Ph.D., 1970, Case Western Reserve.
- Battista, Joseph Victor (1975), *Clinical Instructor in Obstetrics and Gynecology*, A.B., 1964, Princeton University; M.D., 1968, Cornell University.
- Bayer, Frederick W. (1968), *Clinical Instructor in Rehabilitation Medicine*, M.D., 1950, University of Louisville.
- Baylor, Richard N. (1954), *Assistant Clinical Professor of Medicine*, M.D., 1946, Medical College of Virginia.
- Baxter, Martha P. (1975), *Assistant Professor of Dental Hygiene*, B.S., 1972, Ohio State University; M.S., 1975, University of Iowa.
- Beachley, Michael C. (1970), *Associate Professor and Acting Chairman, Department of Radiology*, A.B., 1962, B.M.S., 1963, Dartmouth College; M.D., 1965, Harvard University.
- Beall, John D. (1962), *Assistant Clinical Professor of Restorative Dentistry*, D.D.S., 1948, Medical College of Virginia.
- Bear, Edward S. (1972), *Assistant Professor of Medicine*, B.S., 1958, University of Michigan; M.D., 1962, Temple University.
- Bear, S. Elmer (1951), *Professor and Chairman, Department of Oral Surgery and Professor of Surgery*, D.D.S., 1945, Northwestern University.
- Bearden, Florence M. (1975), *Associate Professor of Occupational Therapy*, B.A., 1948, University of North Carolina; M.A., 1969, University of Southern California.
- Beazley, III, Wyatt S. (1969), *Assistant Clinical Professor of Surgery*, B.A., 1957, University of Virginia; M.D., 1961, Medical College of Virginia.
- Beck, Ralph E. (1968), *Associate Clinical Professor of Pathology*, A.B., 1954, M.D., 1957, University of Illinois.
- Becker, Donald P. (1971), *Professor of Surgery and Chairman, Division of Neurosurgery*, B.A., 1957, Williams College; M.D., 1961, Western Reserve University.
- Becker, Elmore J. (1965), *Assistant Clinical Professor of Internal Medicine*, A.B., 1952, Georgetown University; M.D., 1956, University of Virginia.
- Bedinger, Robert W. (1958), *Assistant Clinical Professor of Medicine*, M.D., 1948, Medical College of Virginia; B.S., 1968, Virginia Military Institute.
- Belcher, James R. (1975), *Clinical Instructor in Pharmacy*, B.S., 1972, Medical College of Virginia of Virginia Commonwealth University.
- Belgrad, Richard (1975), *Associate Professor of Radiology*, B.S., 1952, Loyola College; M.D., 1956, University of Maryland.
- Bell, Bertha R. (1974), *Instructor in Nursing*, B.S., 1957, St. Joseph College; M.S., 1960, Boston College; M.S., 1971, University of Maryland.
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- Camp, Norman W. (1976), *Assistant Clinical Professor of Psychiatry*, A.O.A., 1962, University of Florida; M.D., 1966, University of Tennessee.
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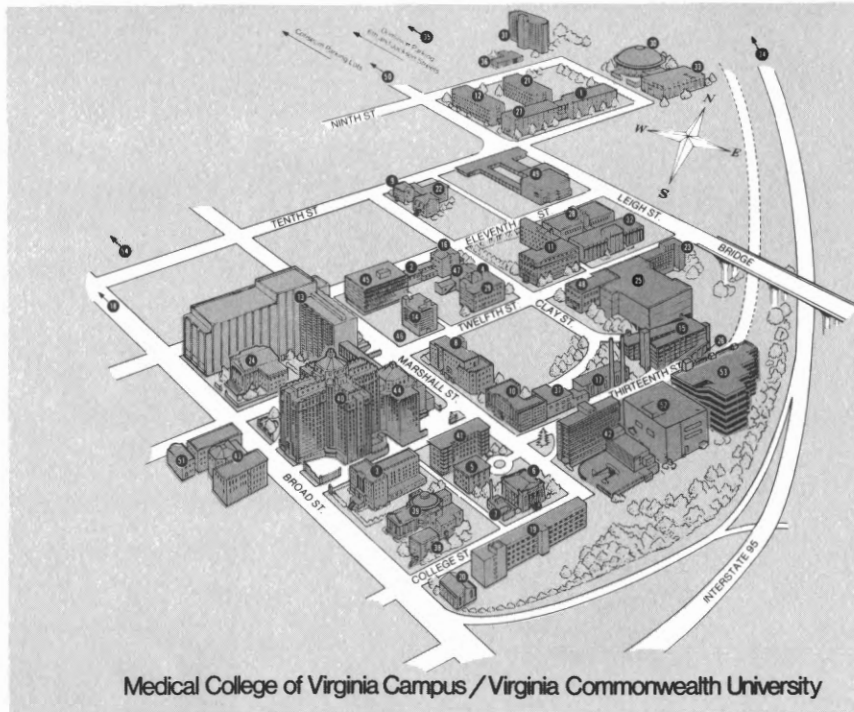
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INDEX Medical College of Virginia Campus



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- 1 Bear Hall—dormitory, 10th and Leigh Streets
- 2 Bowe House, 411 North 11th Street
- 3 Nursing Education Building, 1220 East Broad Street
- 4 Child Development Clinic, 1107 East Clay Street
- 5 Dooley Building, 1225 East Marshall Street
- 6 Egyptian Building—Baruch Auditorium, 1223 East Marshall Street
- 7 Animal Laboratory (Department of Microbiology)
- 8 Hunton Hall, 1200 East Marshall Street
- 9 Leigh House—Physical Plant Office, 1000 East Clay Street
- 10 MacFarland Hall, 1220 East Marshall Street
- 11 McGuire Hall, bookstore, 1112 East Clay Street
- 12 McRae Hall—dormitory, 10th and Leigh Streets
- 13 Sanger Hall, 1101 East Marshall Street
- 14 Richmond Eye Hospital, 408 North 12th Street
- 15 Visitor Parking Deck
- 16 Personnel Employment Office, 1101 East Clay Street
- 17 Central Heating and Power Plant, 400 North 13th Street
- 18 Purchasing, 1207 North Boulevard
- 19 Randolph-Minor Hall—Psychiatric Outpatient Clinic, housestaff dormitory, 307-315 College Street
- 20 Randolph-Minor Annex, 301 College Street
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- 22 Radiobiology (Sheltering Arms), 1008 East Clay Street
- 23 Strauss Research Laboratory, 527 North 12th Street
- 24 Student Union Building—restaurant, post office, 12th and Broad Streets
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- 35 Physical Plant Shops (Armory), 630 North 8th Street
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- 38 Newton House, College and Broad Streets
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- 40 MCV West Hospital, 1200 East Broad Street
- 41 MCV East Hospital (St. Philip), 1215 East Marshall Street
- 42 MCV North Hospital (E.G. Williams), 1300 East Marshall Street
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- 44 A.D. Williams Memorial Clinic, 1201 East Marshall Street
- 45 Nelson Clinic—self-care unit, Health Testing Center, 401-409 North 8th Street
- 46 Skull and Bones Restaurant, 12th and Marshall Streets
- 47 MCV Alumni Building, 1105 East Clay Street
- 48 Richmond Academy of Medicine, 1200 East Clay Street
- 49 Virginia Treatment Center, 515 North 10th Street
- 50 Medical Records (Western Union Building), 308 North 7th Street
- 51 Nursing Staff Development Offices, 223 Governor Street
- 52 Supply Center
- 53 Faculty-Staff Parking Deck
- 54 Holiday Inn—Office of Continuing Education, Office of Research and Graduate Studies, 301 West Franklin Street

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